

small air forces observer

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April 2013

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Aircraft Impressed in Holland: 1939-1940
North Korean People's Air Force: Part 8
French Martin B-26 Marauders
Lebanese Huey Bombers
Pulqui I & II

vol. 36 no.4 (144)

April 2013

Bangladesh Air Force - 2012



The BAF has 10 operational Chengdu F-7s out of 12 fighters and 4 two-seat versions of the F-7 that were delivered in 1990. They are all scheduled to be retired in 2014.



One of four Lockheed C-130B purchased from the USAF. The BAF will be upgrading to C-130Es in the near future.



Two BAF Chengdu F-7s preparing to takeoff. The F-7 is a Chinese-built version of an early Mig-21 with some Chinese modifications.



The BAF has 7 Nanchang A-5s for close air support. They are scheduled to be replaced by upgraded F-7s in 2014.



BAF Mig-29Bs will be upgraded to Mig-29SMT standards in the near future. The BAF has 8 Mig-29s in service - 6 fighters, and 2 two-seat trainer versions. The BAF obtained the Mig-29s from Russia.

Captions and photos via Terry Love (SAFCH #229)

SMALL AIR FORCES OBSERVER

The Journal of the Small Air Forces Clearing House

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COVER COMMENTS: The all-red Argentine I.Aé-27 Pulqui I fully restored and ready for the 50th anniversary of her first flight. Designed by Emile Dewotine, it was the 9th jet fighter to fly in the world. (Adalberto Fluxá) The story of the Pulqui I and Pulqui II is covered in the book by Fernando Benedetto with well-research text, copious photos, and beautiful color drawings. See the review in this issue of SAFO.

EDITORIAL: The time has come to renew your SAFO subscription for Vol. 37 (July 2013 to April 2014). You will be receiving a reorder form either with this issue or by email. This form will inform you of the status of your SAFCH account. Beginning with the July 2013 issue, a color edition of SAFO will be available on our Website. There will now be three classes of subscriptions: (1) Paper copy for the US and Canada \$20.00. (2) Paper copy rest-of-world \$24.00. (3) Website copy \$14.00. All subscribers will be able to download the color copy from our Website: safch.org.

-decals-decals-decals-decals-decals-decals-decals-decals-decals-decals-

"Every day we are working on new **Antarqui** decals, the twins, so they are coming along awesome!! They are: Ryan trainers Mexico/Guatemala, Sabre F-86F Colombia/Peru, Beech Mentors

Argentina/Chile, AT-6 Texan Peru/Chile, General Dynamics F-16 Chile/Venezuela, Canberra Venezuela/Ecuador, and so on. They are very appealing and should sell like "hot tacos con guacamole". I don't

know when they will be ready, but we are hard at work."
Ron Ferreyra (SAFO #482), USA.

AUSTRALIA

AUSTRALIAN PLASTIC MODELLERS ASSOCIATION

(APMA, PO Box 51, Strathfield, NSW 2135; 4 issues airmail A\$40. International payment is best handled via Paypal at iansharyn@bigpond.com.au. Web Site: www.apma.org.

3-12 (28 pages) "Alcock A.1" one page with a 1/48 scale 3-view drawing. "Power Operated Turrets (Part 1)" 3 pages of drawings. "General Aircraft Ltd Hotspur II" 6 pages with photos and factory drawings. "RAAF Sabres" one page with 2 photos of Sabres being serviced. "Junkers Ju 52/3m bomber" 3 pages with factory photos and drawings of the retractable ventral 'dustbin' machinegun position. "Boeing 247 (Part 1)" 2 pages with 2 profile drawings [Zimmerly Airlines & Pennsylvania-Central Airlines]. "Korean Peoples Air Force" 3 pages of color drawings. [Ed: These are Frans Scheve's drawings that appeared in recent issues of SAFO. They are much more impressive printed in color and on paper than they were in b&w in SAFO and even in color in the digital SAFO.]

4-12 (40 pages) "B-25 Mitchel Collection: Post-War Years" 2 pages with 4 profile drawings [RCAF (2), Chinese Nationalist, & USAF]. "Building and Finishing RAAF GAF (Avro) Lincolns in 1/72 (Part 1)" 23 pages including 10 profile drawings, 4 pages of 1/72-scale drawing, 3 pages of 1/144-scale drawings, and 11 photos of the model under construction. "Boeing 247 (Part 2)" 2 pages including 3 profile drawings [Western Air Express & Lufthansa (2)].

CZECH REPUBLIC

Revi These and other issues are available from SAFCH Sales Service: \$7.00 per issue plus postage.

#74 "Nemecke sojky nad Balkanem" 3 pages, 10 photos of Ar 96 in Bulgarian markings.. "Henschel Hs 126" 3 pages of scale drawings & kit survey. "Italsti vacnatci utoci" 7 pages, 4 photos, 2 color profiles, map of daring bombing raid by Italian SM.82s on oil facilities in the Persian Gulf flying from Damascus to Ethiopia. "Fokker versus Voisin – Halic 26. srpna 1916" 5 pages, 11 photos.

ENGLAND

AVIATION CLASSICS

#18 Messerschmitt B 109 (132 pages) See the 'magazines' section of this issue of SAFO.

FRANCE

AVIONS: Toute l'Aeronautique et son Histoire (Lela Presse, 29 rue Paul Bert, 62230 Outreau, France. 71 euro for 6 issues). Website: www.avions-bateaux.com. E-mail: contact@avions-bateaux.com.

#190 Novembre/Decembre 2012 (96 pages) "Cahier Spécial: Le Messerschmitt Bf 109E (fin)" 32 pages including 74 photos (all Luftwaffe except 3 Swiss and 2 Romanian) and 15 color profile drawings (all Luftwaffe except one Romanian. "Les Cigognes de l'escadrille SPA 3 ont 100 ans" 8 pages including 22 photos. "L'ECN 3/13 à Gabés (1)" 8 pages including 20 photos and 2 color profiles (Potez 631). "La bataille la Mer de Bismark (1)" 16 pages including 24 photos, one map, and one color profile (Mitsubishi A6m2b). "1919-1920: Les avions français dans la Pologne en guerre (1)" 16 pages including 42 photos and 4 color profiles [Breguet 14 (3) & Spad 7 (1)] "Churen type 93 (Yokosuka K5Y Willow (4))" 6 pages on Kamikaze attacks b Willows including 9 photos and one color profile drawing.

GERMANY

FLIEGER REVUE EXTRA (Verlag Fliegerrevue, Herrn Detlief Billig, Oranienndamm 48, D-13469 Berlin. 4 issues per year, \$66 surface. Payment by check drawn on German bank)

#38 (116 pages) "Duetsche Nachtjagd: Flugzeuge und Projekie" 26 pages including 31 photos and 6 color drawings of projects. A/c covered include: Do 217N, He 119, Ju 88C/G, Ju 388J, Bf 110G-4, Me 262 B-2, Gotha P 60C, Ju EF 128, Arado 583, & Ta 154). "Cant Z.511 – Ein Spezialflugzeug für Kommandounternehmen" 4 pages including 8 photos. "Schiffe im Visier alliierter Flugzeuge" 30 pages including numerous maps & photos of German ships sunk in Norwegian fjords by RAF and Russian a/c. Ships: *Niobe*, *Tirpitz*, *Schlesien*, *Orion*, & *Graf Zeppelin*. A/c: Lancaster, Pe-2, & A-20. "Bell baute Jäger für die Sowjetunion" 4 pages

including 10 photos. "Bulgarische Dewoitine D.520" 8 pages including 17 photos (with 2 photos of Swiss D.27 thrown in for good measure). "Iljuschin Il-38: Russlands fliegender U-Boot-Jäger" 8 pages including 16 photos (2 photos & a color profile drawing of Indian AF Il-38).

IPMS Deutschland Journal. Website: ipmsdeutschland.de. All color. Subscription: Europe 36 €; others 40 €.

Jahrgang 45/1 (40 pages) Reviews of: 1/48 Eduards Bf 109E-1, 1/48 HobbyBoss Me 262A-1a U4, 1/48 Special Hobby Vought V-173, 1/48 Eduard MiG-21MFN, Revell 1/32 Typhoon 1B, & Mura 1/32 J7W1 Shinden. [Ed: Many years ago when I tried to scratch-build a V-173 who would have imagined that someday there would be 1/72- and 1/48-scale injection-molded kit available.]

ITALY

JP4 Menslie di Aeronautica e Spazio. Via XX Settembre, 60-50129 Firenze, Italy. Email: jp4@dueservice.com. Website: www.ediservice.it.

Decembre 2012 (100 pages) Color photos: Thai AW 139, S. Korea Boeing 737 AEW&C, RNZAF Boeing 757, Mauritania Super Tucano, & Portugal P-3C CUP+. "Malta Air Show 2012" 2 pages including 6 photos (incl. Libya CH-47 in new national insignia). "Il ritorno di un Avia FL3" 2 pages including 7 photos of FL3 in WW2 Croatian insignia. "Veterani e Musei" 2 pages including 9 photos (incl. Ro.37 & reproduction PZL P-37 Łos). "Incidenti Militari" one page including 4 photos (incl. Russian Be-12PS & Tanzania Hongdu K-8 'JW9129'); and Syrian AF loses: 5/10 Mi-8 & 2 MiGs; 13/10 L-39 Albatros; 17/10 Mi-17; & 4/11 MiG-23.

Gennaio 2013 (100 pages) Color photos: Bangladesh AS365 Dauphin & Venezuela Shaanxi Y-8. "In volo con i 'Leoni' del 20° Gruppo" 8 pages on Italian EF-2000 Typhoons including 17 photos. "J-15: trionfo e tragedia" 2 pages including 5 photos. "Incidenti Militari" 1½ pages including 6 photos including Venezuela Hongdu K-8. Syrian AF loses reported are: 4 Mi-17 on 16/11, 24/11, 27/11, & 28/11 and 3 unspecified MiGs on 28/11, 29/11, & 1/12.

Aircraft Impressed in Holland: 1939-40.

Frits Gerdessen

When the Second World War started and the Dutch armed forces fully mobilized, the Militaire Luchtvaart (ML) commandeered some civil aircraft for communications and other duties. Most likely some of these had already been earmarked. [This also happened, on a much larger scale, with automobiles for the army (and ML)]. All were single-engine light planes, except for the DH.90 Dragonfly. For commandeered automobiles and aircraft, a contract was made with the owner. The MoD would pay rent (e.g. per flying hour) until an agreed purchase price was reached. Then the object would be government property. The commandeered aircraft received serials from 960 onwards.

The first draft was in September 1939: Koolhoven FK.43 960 PH-CMD (960) and DH.85 Leopard Moth PH-VYG (961). In addition, Shells Director ir. J.E.F. de Kok made his DH.90 Dragonfly 962 PH-ATK (962) available as transport for Commandant Veldleger, the Field Army Commander. In October, the next batch was drafted: DH.85's PH-FDK (963) and PH-HJP (964) and FK.43 PH-ASN (965). Also, FK.43 PH-ASO (966) and DH.85 PH-JUH (968) were commandeered - at least they got a military serial. Fokker's North American NA-27 demonstrator PH-APG was hired for use by the Flying School, and in September it was serialised 997. Most impressed aircraft were painted trainer-blue.

s/n	date	type/civil reg.	c/n	owner
960	09-39	FK.43 PH-CMD	43.10	Publishing firm Misset.
961	28-09	DH.85 PH-VYG	7037	Nationale Luchtvaart School
962	01-09	DH.90 PH-ATK	7539	Ir. J.E.F. de Kok
963	-09	DH.85 PH-FDK	7094	Nationale Luchtvaart School
964	-10	DH.85	PH-HJP	7043 H.J.P. van Heek
965	17-10	FK.43 PH-ASN	43.11	KLM
966	17-10	FK.43 PH-ASO	43.12	KLM
967		No record		
968	17-10	DH.85 PH-JUH	7098	J. Heijmans
		FK.43 PH-AJT	43.03	Koolhoven, not delivered.
		FK.54		54.01 Koolhoven, not delivered.
997	-07	North Am. NA-27		27-312 Fokker

Note: Though they were allotted a military serial, 966 and 968 were never used by the ML. Two more aircraft were ordered from Koolhoven, an FK.43 and the FK.54, but the war prevented their delivery.

FK.43 960 (PH-CMD) served all the time at Soesterberg as a hack, ending up with V-2 LvR, the Army Fighter Group. It was flown to Ypenburg on 7 May 1940, when Soesterberg had to be evacuated. There the plane must have been lost. Apparently the owner, Misset, had never asked and never received payments for the plane. A letter dated 13 August 1940 stated that the 960 had been confiscated by the Wehrmacht and that the MoD had to pay Misset f 6.500. At the time the MoD was being liquidated and replaced by an agency for the interests of the former Dutch armed forces which e.g. had to care for pensions and settle financial liabilities.



FK.43 PH-CMD (960), no photos of this plane in military markings are known.

DH.85 961 (PH-VYG) had a most remarkable career. It was registered as PH-VYG to the NLS (Nationale Luchtvaart School) at Ypenburg on 18 January 1937. It became the staff plane of C.2 LvR, Lt.kol. J.H. Sar. His pilot was capt. I.A. Aler. 2 LvR's HQ was near Soesterberg, thus 961 was kept there. From December 1939 to April 1940, the 961 flew 90 hours (at f 25/hr.), 38.40' in April 1940 alone. The reason for that was that after the April alarm (9th April, German attack on Denmark and Norway) several ML units were relocated and Lt.kol. Sar visited all under his command. The NLS sent the bills for flying hours on the 2nd or 3rd of the next month. In addition, bills were sent for servicing and hangar use, etc. What happened with 961 in May 1940 is unclear. Its whereabouts are unknown, but the plane must have been evacuated from Soesterberg, most likely to Schiphol on 7 May, though Lt.kol. Sar and his pilot capt. Aler were still at their nearby HQ. Somehow it was spirited away, dismantled and hidden, possibly by Lt. G. Sonderman, Fokker test pilot and G.1 pilot. Some days before the German capitulation on 5 May 1945, 961 was assembled near Schiphol, and once the Germans had capitulated

Sonderman made trips to the earlier liberated south of the country. The plane was now serialised ML101 and carried RAF markings with an orange triangle on the nose. On 2 January 1948, ML101 was registered as PH-NCP to a Mr. Lankhof, and on 8 September to the Noord Nederlandse Aero Club at Eelde. On 25 September 1948, PH-NCP crashed at Laschendorf (DDR)



DH.85 961 at Soesterberg.



DH.85 (961) as serial ML101 post-war.

DH.90 962 (PH-ATK) was “tested” on 5 September by the Army Commander, Lt.Gen. J.J.G. baron van Voorst tot Voorst, and promptly shot at by his own troops! Its pilot was kapt. W.H. Wijnkamp, who commanded I-2 LvR, the 1st Army Recce Group at Hilversum. His reserve was Lt. G.J.E. Scheepens. Kapt. Wijnkamp was appointed Army Fighter Group (V-2 LvR) commander on 1 December 1939, and he moved to Soesterberg, with 962 and Lt. Scheepens. To avoid being shot at in the future, 962 flew with orange ribbons behind the wings. Soesterberg had to be evacuated on 7 May 1940, and kapt. Wijnkamp flew 962 to Ypenburg, with kpl. E.H. Koning as mechanic. 962 was damaged at Ypenburg sustaining a broken starboard bottom wing. Also the tail was damaged. Who did that is not clear. In June, it was transported off by barge with other aircraft. Immediately after the capitulation in the

afternoon of 14 May, likely next day, lots of civilians took a look at Ypenburg before German troops arrived. Some Aero Club members found 962 and managed to start one engine, but German troops had arrived and all civilians were chased from the field.



DH.90 at Ypenburg.



DH.90 on the Ringvaart canal near Schiphol while aircraft were being transported from Ypenburg by barge: The aircraft are: DH.90, DB-8A 383, C.V 596, and some FK.51's. [Author: The photographer was 14 at the time and in a canoe with friends. I got it from his son.]

DH.85 963 (PH-FDK) was impressed in September 1939 and allotted to the Inspector of Military Aviation (IML), kol. F.A. van Heijst. The plane belonged to the NLS at Ypenburg and remained there. The MoD paid servicing and hangar costs. 1st Lt. H.J. Diehl of II-2 LvR at Ypenburg was appointed as pilot and made the first flight on 13 October. Thereafter, he made more flights but we have no details. After the capitulation, 963 was stored. In May 1941, the plane was confiscated by the German authorities and scrapped. The NLS received f 7.000. In 1941, the private aircraft were confiscated by the Germans and the owners were refunded.

DH.85 964 (PH-HJP) was also impressed in September 1939 and allotted to the IML. Lt. Diehl made the first flight at Ypenburg on 17 October. Details of its further use

are not known. 964 was damaged at Ypenburg in May 1940 and scrapped in 1941.

No pictures of the 963 and 964 are known.

FK.43 965 (PH-ASN) had served with KLM as trainer and taxi plane. It was issued to II-1 LvR, the Air Defence Fighter Group and mostly served at Soesterberg, as a hack and (blind-flying) trainer. On 7 May 1940, 965 was flown to Schiphol. 965 survived the 5-day war and, early a.m. 15 May, the Jewish sports- pilot Justus Heijmans (owner of DH.85 PH-JUH), assisted by some D.XXI pilots, took off for England and landed at 05.30 local time at Orford Ness. The FK.43 was used by the RAF at Martlesham Heath and later with No. 277 Sq. In May 1942 the plane went to No. 320 (Dutch) Sq. and received serial MX459, which was not painted on. Instead it carried the marking FK43. In May 1944, FK43 was transferred to the Dutch Government (in exile), and in November 1945 it was returned to Holland and KLM. KLM apparently had no use for the plane, now registered PH-NAU, and sold it in September 1946 to sports-pilot K. de Geus van den Heuvel. On 29 September 1949, it was acquired by the NLS. It was struck from the register on 8 September 1952. The FK.43 went to the Anthony Fokker School and was scrapped in 1955.



FK.43 965 (PH-ASN) at Soesterberg

FK.43 966 (PH-ASO) also served with KLM as trainer and taxi plane. Apparently the plane was not used by the ML.

The identity of 967 is unknown. There was a rumour that it might have been a sports plane from the Netherlands East Indies.

DH.85 968 (PH-JUH) was requisitioned by the MoD on 17 October 1939, but apparently not used by the ML. Its CoR expired on 2 May 1941.

FK.43 PH-AJT (43.03), built in 1932 and registered PH-LUX, had been bought back by Koolhoven in 1935. On 15 November 1939, it was verbally ordered by the MoD. Later a pro-forma contract was drawn up and the

price was set at f 5.000. On 10 May 1940, the plane was 100% ready and about to be delivered. It was lost with the factory. It might have received serial 969. On 19 February 1940, a report was sent about the inspection in the Koolhoven factory of 'FK.43 996'. However, 996 was the Fokker S.IX X-3. So, might this be AJT.



FK.43 PH-AJT

The sole **FK.54 (54.01)**, a high-wing sports plane like the FK.43, was ordered by C.E. van 't Groenewout, a commissioner of the Koolhoven Factory, but not accepted. It was first and likely only once, flown in summer 1938. The registration PH-APR was reserved, but not applied. The FK.54 was the first Koolhoven with a (hydraulically) retractable undercarriage, which folded into the fuselage bottom and had cost the designers lots of headaches. As a result, it remained a hangar queen until the ML verbally ordered it on 15 January 1940 for f 15.000. Now the retractable u/c was replaced by a fixed one. On 10 May 1940, the plane was 100% ready and about to be delivered when it was lost along with the factory.



FK.54

North American NA-27 (or NA-16-2H) 997 was a demonstration aircraft, as Fokker represented North American in Europe. It was registered on 21 July 1937 as

PH-APG. Apparently, the ML was much interested in the type, and PH-APG came to Soesterberg, likely in July 1939. Anyway, the plane was with at the Flying School on 1 August 1939. The earliest known instruction flight was on 2 August 1939. By contract, on 22/26 August, the MoD hired the PH-APG for f 5 per flying hour. In September, it was serialled 997. 997 was intensively used, being the only trainer suitable for conversion to the Fokker D.XXI until delivery of the FK.56 started in April 1940. Thus, nearly all pilots in final training had their turn on this plane. 997 went along when the Final Training (Eindopleiding) moved from Soesterberg to Texel on 11 November 1939. On 22 March 1940, the MoD purchased 997 for f 48.360. On 11 May 1940, 997, along with other trainers, was destroyed in a Luftwaffe attack at Texel. Up to 15 September 1939, 997 had 85.28' flying hours. In ML service, 65 hours were flown in 1939. In October 1939, 997 was overhauled and in December underwent a 100 hrs inspection. (It may be added here, that the V.O.S. (Vrijwillige Organisatie Sportvliegers/Volunteer Organisation of Sports Pilots) apparently had lost interest. This organisation had been set up to support the ML with communications aircraft and also has held exercises, but was no more heard of in 1939.)



NA-27 997 at Texel

Pseudo-Military Serials

During the mobilisation period (September 1939 to May 1940), a number of factory aircraft carried military markings and serials, otherwise aircraft could not be flown.

Fokker

Fokker used serials from 970 on. 970 was the T.IX bomber prototype and the two G.I Wasp were 975 and 977. Whether these serials were applied, is not clear. Finally, there were 996 (S.IX), 997 (NA-27), and 998 (D.XXIII). 996 was an S.IX prototype with factory registration X-3. It was used as a hack. The D.XXIII had the factory registration X-4, and made a few test flights as 998. Also used were naval serials R-37 and R-38 for

T.VIII's for Finland; the former a seaplane and the latter a landplane. The MLD had ordered 36 T.VIII-W as R-1/36.



Fokker D.XIII X-4



Fokker S.IX X-3 rompnr. (c/n) 5479 with pseudo-serial 996. This is the prototype with a A.S. Genet, the version used by the ML.



This T.VIIIW for Finland was not flown before 10 May 1940. Later it flew with Luftwaffe's Kennzeichen KD+GG and KD+GH.

Koolhoven

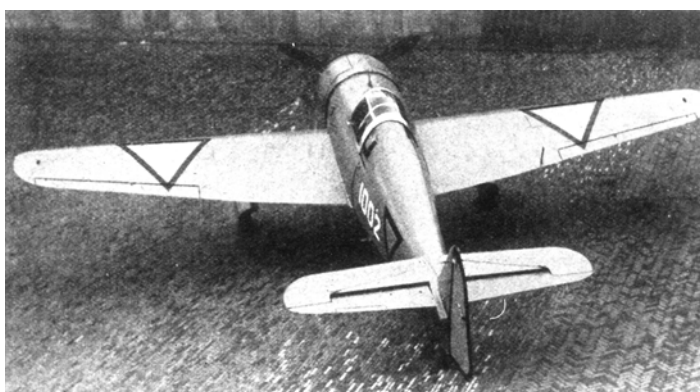
Koolhoven used serials in the 1000-series.

1001 The Finnish FK.49 OH-MVE (49.03) was tested with this serial in winter 1939/40. Later, FK.56 56.13 underwent vibration tests carrying serial 1001.



FK.56 1001 (56.13) undergoing vibration tests in February 1940.

1002 The second FK.58 fighter prototype PH-AVA carried this serial, but whether it was flown is not known.



FK.58 1002/PH-AVA

1003 FK.46 trainer PH-ATS (46.13).



FK.46 1003 (PH-ATS, 46.13) 1003 was tested on 2 and 4 January.

1004 Possibly FK.56 trainer prototype PH-ATE (56.02)

1005 FK.56 trainer prototype PH-ASB (56.01)

1006-1007 FK.52 recce biplanes PH-ASW (52.02) and PH-ASX (52.03). Both were delivered to Finland in January 1940, but most likely never carried these serials.

De Schelde

De Schelde flew its S.20 PH-ATY with serial Y-200.



De Schelde S.20 Y-200

A special case was KLM's cartographic plane F.VIII PH-OTO, which also carried military markings and the serial 951. It was based at Waalhaven where the KLM had its photo section. The Army HQ badly needed to update maps, especially of its defence lines, and PH-OTO was chartered. On 10 May 1940, 951 was lost at Waalhaven. KLM requested compensation, but that was not given as 951 was not on charter at the time. Based on a photo, it appears that 951 was painted dark green. The KLM photo section considered Waalhaven airfield not a safe place in case of a war and brought a lot of its materials, including masses of glass plate negatives, into storage in Rotterdam. They thus still exist.



At the right is F.VIII 951/PH-OTO. In the center is G.1 323, at the left the wing tips of a C.V and Cierva C.30A PH-ASA.

Frits Gerdessen (SAFCH #12), Netherlands.

I.A. 33 Pulqui II: A Broken Dream

Pablo Calcaterra

After the end of WW2, Argentina was enjoying a prosperous time because of the influx of money received in exchange for food exported to a devastated Europe. One of the several German scientists and engineers who immigrated to Argentina after the Second War World was the famous Kurt Tank. He had designed the great Focke-Wulf 190 and Ta-152, and by war's end was working on a jet fighter – the Ta-183.

Also arriving in Argentina at this time was Emile Dewotine who could not stay in France because of his collaboration with the Germans during the war. A group of Argentine engineers had started to work on a project to build a jet fighter in 1945 and Dewotine led them. Their design became the ninth country in the world to fly a home-grown jet plane - and first in South America. It was called iAe-27Pulqui I and flew for the first time on August 9th, 1948.

The list of the other jet planes that flew before the Pulqui I is as follows:

1. Heinkel 178 (Germany Aug 39)
2. Camproni Campini N1 (Italy Aug 40)
3. Gloster 29-39 (UK May 41)
4. Bell XP-59 (USA Aug 41)
5. Nakayima Kika (Japan Aug 45)
6. Yakolev Yak-15 (USSR Apr 46)
7. Sud Ouest Triton 6000 (France Nov 46)
8. SAAB 21-R (Sweden Mar 47)

It was a very basic concept with unswept wings that did not live up to expectations (a design that was not achieving 800 km/hr and that could not be further developed). Kurt Tank and his team of German engineers who had arrived in Argentina around that time were involved in the last stages of the development of the Pulqui I giving advice in regards to some changes to the plane. The plane flew many times even into the '50s even though the project had been cancelled.

Enter the Pulqui II

But Tank had in mind a more advanced plane derived from his Ta-183. The team of Argentine engineers (Morchio and Ricciardi) had worked on a more advanced project which was called iAe-27a. Both teams (German and Argentine) shared their ideas and a combination derived from German and the Argentine design came to fruition. Most of the characteristics were taken from the Argentine project with only the fuselage being of German design (wings and tail of both teams were very similar). This project received strong support from President Peron's Government. The Argentine engineers left the project shortly afterwards.

Two wooden gliders were built and tested. Improvements to the plane were made based on these flights. The first two prototypes were built at the Fabrica Militar de Aviones (Militar Aeroplanes Factory or FMA) and were called E-1 and E-2 (to be used for static tests). E-1 was first flown by Argentine Air Force pilot Edmundo Weiss on June 16, 1950. At the moment the Pulqui II was arguably one of the most modern planes in the world.

After an almost fatal accident caused by a faulty seal in the main landing gear while being flown by German test pilot Otto Behrens (a former Luftwaffe WWII ace) in the controls, some modifications were made to improve performance. These included refining the union of the wings to the fuselage and increasing the size of the tail. It took 4 months to get the plane ready for flight again.

When Tank flew the plane for the first time, he tried to stall it at 9,000 m and it fell like a rock; only Tank's experience allowed him to regain control. He repeated the maneuver and the same problem happened again: there were no indications that a stall was approaching. After studying the literature it was found that at certain attack angles the T-type tail of the Pulqui II could lose lift when a partial-vacuum was created behind the wings. Ballast was added to the nose of the Pulqui II to prevent this from happening again. Now, when the plane stalled, it would dip its nose and allow the pilot to regain control rapidly. On February 11, 1951, the plane, flown by Tank, performed over Buenos Aires, to the delight of thousands of people including President Peron.

About this same time, Prince Bernard of Holland visited Argentina and was shown the plane. His Air Force was looking for a jet plane, and although he was interested in the Pulqui, Holland finally bought a batch of Gloster Meteors Mk 8.

Development Continues

The development of the Pulqui II was going so well achieving speeds of up to 900 km/hr that the best Gloster Meteor fighter pilots of the Air Force were sent to test-fly the plane. The Meteor demanded a lot of muscle to be flown, while the Pulqui II (as all of Tank's planes) could be flown with "the tip of the fingers".

The first pilot to fly the plane was Commander Soto on May 31st, 1951. During his flight the team expressed concern about the turns and the Argentine pilots were again warned to turn only using the ailerons. Then it was the turn of the other Air Force pilots, Vedania Mannuwal. It is believed that trying to outperform his superior, during a high performance turn, one of the wings broke and Mannuwal ejected from the inverted plane. Because the primitive ejection seat required several steps before the

parachute could be opened and he had ejected upside down, the pilot fell to his death. The prototype E-1 was completely destroyed. It was later found that one of the 2 main pieces that linked the wing to the fuselage had not been properly welded. This fact, probably added to the fact that Mannuwal had flown the plane as it were a Meteor, provoked the accident.

The third prototype (E-3) was finished around the end of 1951. More modifications were made: the fuel capacity increased from 2,000 to 3,000 liters, the landing gear was strengthened, and the rudder was adjustable in flight.

After several test flights, Otto Behrens, WWII German fighter ace, practiced intensively to prepare for a demonstration flight for President Peron in October 1952. Just two days before the event and while practicing for the transcendental show (it was estimated that a successful display could guarantee the start of production of the plane) Behrens complained on the radio about a strange noise in the plane and a capricious behaving. He dived towards the ground and then climbed back to 800 m. The plane lost speed and suddenly stalled and went on an inverted spin. He succeeded in recovering control but the ground was too close and he did not have time to regain altitude. The plane disintegrated and the famous World War II German pilot was killed instantly.

While 3 more planes were slowly being constructed E-2 was then rushed into service in 1953. It had been modified based on all the experience gathered: a fence above each wing, and four on the fuselage close to the tail to improve the airflow in this area and air brakes. This was the first plane that carried four 20 mm cannons and endurance was now 3 hours, without external fuel tanks.

A team of Air Force pilots was in charge of testing the plane. They were: 1st Lt. Conan Doyle (who made the first firing tests), Lt. Gonzalez, and Lt. Balado. It is probable that in any other country, a pre-production series of planes would have been built at this stage with the minor problems being ironed out in the future.

Pressurization was tested in a flight that reached around 45,000 ft, and the maximum speed of 1,080 km/hr was achieved in a dive from 40,000 to 30,000 ft. This speed could not be exceeded because of the limited thrust of the Rolls Royce Nene II. An all-weather version with radar was under development as well.

Around this time, visits from the USA, USSR, and other countries interested in this development took place. Egypt wanted to buy all the Pulqui II that were available...but the only one built was the prototype E-2!

Development was slow because other projects such as the Ia-35 Huanquero (a design of the Tank team that went into series production) and the utilization of the installations of the FMA to build cars for the general public, had drained resources from the Pulqui project.

Last chance

In September 1955, after almost 10 years in power, the Peron regime was ousted by a military coup. It is now believed that the Pulqui II took part in some sort of combat on the rebel side during the revolution. During a flypast to celebrate the victory the plane carried the V with the + inside (for Cristo Vence = Victorious Christ) painted on the nose. Most of the Air Force officers in charge of the Pulqui II project were fired as they were openly pro Peron. Tank were persecuted by the new authorities under the charge of having a false identity (all his documents were signed Pedro Matties). Tired of these games, Tank left the country along with most of his team. He went to India where he developed a successful plane, the HF-24 Marut, which was in fact what would have been the Pulqui III, the supersonic successor of the Pulqui II.

Because the plane was the product of the "wrong" regime and most of the team had left the country, the project lost momentum. In an effort to gain political support, a record flight is tried: take off from Cordoba, fly to Buenos Aires 800 km away, strafe an Air Force practice range in the area, and return to Cordoba without refueling. The only oxygen equipment available for such a long flight was taken from a Meteor under repairs at the FMA. Pilot Balado successfully made all the flight at an average speed of around 900 km/h, but a failure in the oxygen system on the last leg of his flight impaired his judgment. As a consequence, at the end of his record-breaking flight and he landed the plane heavily (at 300 km/h instead of 180) and although he suffered only bruises, the plane was damaged beyond repair.

End of a Dream

With parts of E-4, E-5 and the few simple parts already manufactured of E-6 another prototype was finished in 1959. By now, the plane was obsolete. The only difference between this plane and the other three prototypes was that it was painted white, while the others were left in bare aluminum. It was an exact replica of E-2 but did not carry armament.

The plane was presented officially to the public on May 24, 1960. Several flights were carried out by Air Force pilots 1st Lt Starc and Lt Garcia and the flight characteristics of the plane were confirmed. But at this time none of the technical experts were available as they had either left the country or the Air Force. After almost one year of tests, E-5 was stored and sent to the Air Force Museum in 1960 10 years after its first flight!

It is said that towards the end of 1956, Brig. Ahrens of the Air Force asks Eng. Guillot, who was in charge of the FMA (Fabrica Militar de Aviones), when 100 Pulquis could be delivered. The answer was that there were enough fuselages and wings for 10 planes to be built immediately, and in four years Pulqui number 100 could be in service in

the Air Force. This plan was rejected as the Americans had offered the Argentines 100 new Canadair Sabre F-86 with the Orenda engine.

Thus, the Pulqui II was killed. As many times happened in the Argentine history, the Americans did not full fill their promises, and only 28 second-hand Sabres (without the Orenda engine) were delivered...four years late (1960)! But they had succeeded in getting rid of the Pulqui that could have been an important player in a secondary international market.

Interesting enough, the Meteors that the Pulqui were supposed to replace stayed in service until 1970, and the F-86s that took the place that should have been the Pulqui's flew for the Air Force (albeit then in training duties) until 1988!

It is important to remark that, contrary to what some websites say about the Pulqui ("a killer plane"), all the accidents happened due manufacturing problems and not due to failure in the design. To better understand the importance of the Pulqui II plane, here is a comparative chart that shows the impressive performances of the Argentine plane (taken from Burzaco's book):

	Pulqui II	Mig 15	Sabre F-86
Weight empty (kg)	3,600	3,382	4,578
Load (kg)	1,950	1,424	1,850
Total Weight (kg)	5,500	4,806	6,400
Max. speed (km/hr)	1,080	1,050	1,090
Cruise speed (km/hr)	960	900	790
Climb rate (m/s)	30	42	37
Ceiling (m)	15,100	14,600	14,630
Range on internal tanks (km)	3,090	1,420	1,690
Thrust (kg)	2,300	2,270	2,683
Fixed Armament	4 x 20 mm	2 x 23 mm	6 x 12.7 mm

It can be seen that the Pulqui could fly higher, faster and farther away than the other two contemporary famous planes.

Summing up the following is the list of the manufactured examples (approximately 100 flights completed in all):

Pulqui I IAe27

Prototype 01

Pulqui II IA-33

Glider V1

Glider V2

Cell I (for static tests)

Cell II (for static tests)

Prototype E-01 (destroyed, pilot Mannuwal killed)

Prototype E-02 (70% destroyed, pilot Balado injured)

Prototype E-03 (destroyed, pilot Behrens killed)

Prototype E-04 (used to build E-05)

Prototype E-05 (in Argentine Air Force Museum)

Prototype E-06 (pre series plane used to complete E-05)

This plane is still considered a proud example of what Argentina could have achieved...and in some ways is similar to what happened to the famous CF-105 Arrow in Canada, a fine plane of the 60s that it is said was in some aspects better than the fighters currently in service in the RCAF (CF-18)!!! Another parallelism between both planes is that Pulqui means Arrow in native South American language.

References

1. Las Alas de Peron (Ricardo Burzaco)
2. I.Ae-27 Pulqui I & IA-33 Pulqui II (Fernando Benedetto)

Pablo Calcaterra (SAFCH #1728), Canada.

Captions for Photos on Page 144

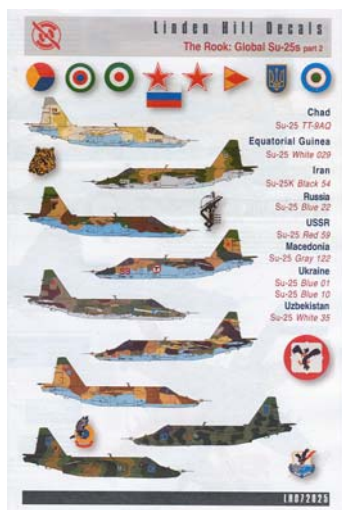
1. Pulqui II E-1 almost ready for first tests. Paint scheme is not complete as the words Pulqui II have not been painted on the fuselage sides. (Ing. Norberto Morchio)
2. Pulqui II E-1 modified and ready for its official presentation to the Argentine public on Feb 8, 1951. (F. Zschäckel via Juan Carlos Cicales)
3. Pulqui II E-3 during static tests of the Nene II engine. Equipment to measure performance can be seen linked to the engine. (F. Zschäckel via Fernando Benedetto)
4. Pulqui II E-5 taking off in 1959. The most striking difference when compared to the previous planes is that its paint scheme is dramatically different - mostly white instead of natural metal. (DINFIA, via Juan Carlos Cicales)

Linden Hills Decals

The most recent decals from Linden Hills are: 32013 Global Su-25s Part 2 (\$21.99), 32014 Global Su-25 (\$23.99); 32015 MiG-23MLD 'Afgantsi' (\$21.99); 48025 Global Su-25 Part 2 (\$20.99), 48026 Global Su-25 Part 3 (\$20.00); 72025 Global Su-24 Part 2 (\$18.99), 72026 Global Su-25 Part 3 (\$18.99); 72028 C-27J Spartans in International Service (\$19.99), & 72029 G.222s & C-27A in International Service (\$18.99).

These decals are based on extensive research. The full-color instruction sheets (8 pages 8.5 inch by 11 inch) include multi-view drawing and history of each a/c. These instructions alone are worth a large fraction of the cost of the decal sets. All sets consist of one decal sheet 95 mm by 190 mm, except 72028 that has an extra sheet 55 mm by 190 mm and 72029 an extra decal sheets 125 mm by 190 mm. These decals are to the usual high quality expected from Linden Hill and include all the national insignia, serial numbers, and personal badges to build all a/c on the set.

I don't think any modeler is going to make 18 1/72-scale models of the Su-25 or 17 1/72-scale models of the C-27J, but there enough exotic countries on these sheets to entice a modeler to build two or three of each. Then, the remaining decals can be used on other a/c to expand a collection of small-air-force subjects. The decal sets received sent for review are summarized below:



The Rook – Global Su-25s Part 2.
LHD72025. US\$18.99.

This sheet includes decals for 9 a/c from 8 countries: Chad (1), Equatorial Guinea (1), Iran (1), Russia (1), USSR (1), Macedonia (1), Ukraine (2), & Uzbekistan (1).



The Rook – Global Su-25s Part 3.
LHD72026. US\$18.99.

This sheet includes decals for 9 a/c from 9 countries: Armenia, Azerbaijan, Congo (DRC), Ivory Coast, Gambia, Iraq, Kazakhstan, Russia (Tajikistan), & Sudan.



C-27J Spartans in International Service.
LHD72028. US\$19.99.

This sheet includes decals for 8 a/c from 5 countries: USA (2), Lithuania (3), Bulgaria (1), Mexico (1), & Morocco (1).



G.222s & C-27J in International Service.
LHD72029. US\$19.99.

This sheet includes decals for 11 a/c from 8 countries: Afghanistan (2), Argentina (1), Italy UN Service (1), Nigeria (2), Somalia (1), Thailand (1), United Arab Republic (1), & USA (2).



The Rook – Global Su-25s Part 2.
LHD32015. US\$21.99.

This 1/32-scale decal set including decals for 6 Mig-23MLD deployed to Afghanistan between 1984 and 1988.

[Ed: The Linden Hill decals reviewed above are available from the SAFCH Sales Service safch@redshift.com. The SAFCH also carries other Linden Hill decals of the "Post-Soviet Air Forces". Other newly released Linden Hill decals are: 32013 & 48025 Global Su-25 Part 2 and 32014 & 48026 Global Su-25 Part 3. Earlier sets for Lithuania, Armenia, and Georgia are available directly from: Linden Hill Decals at: Linden Hill Decals PO Box 543, Crugers, NY 10521. www.lindenhillimports.com. E-Mail contact@lindenhillimports.com.]

Lebanese UH-1H Bombers in Action

João Paulo Moralez and Vatche Mitilian

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When faced with a situation of dire need, we are often able to take actions that, in our everyday life, we would never think we had the ability and courage to execute. This is especially true if the situation involved a fight against an enemy within our own country. It was precisely in such circumstances that Lebanon decided to convert unarmed utility helicopters into bombers.

After the devastating civil war that lasted from 1975 to 1990, Lebanon withdrew its last Hawker Hunter fighters from service in 1994, leaving it without any fixed-wing combat aircraft. The following year, the country received from USA 16 Bell UH-1H Huey utility helicopters (Further deliveries brought this to a total of 24 choppers) to perform transport missions, search and rescue, firefighting, troop transport, and agricultural spraying. Unlike the US and most other countries, the Lebanese Air Force (LAF) is part of the Lebanese Army and is subordinate to it.

Moreover, since the end of the civil war in 1990, Lebanon did not face any serious threat until July 2006 when Israel attacked Lebanese territory in a bid to defeat the Shi'a Islamic militant group and the political party Hezbollah based in Lebanon. The fighting continued until August of that year.

When everything seemed to have returned to normal, a series of actions within the country led Lebanon to face one of the worst internal strife since 1990. On May 20, 2007, members of the Sunni militia group Fatah al-Islam (a movement created in November 2006 with close and ideological links to Al-Qaeda) started a wave of attacks against Lebanese Army posts, killing 20 soldiers and leaving several others injured. All these actions were near the Palestinian refugee camp of Nahr el-Bared (Cold River), located 20km north of Tripoli and 80km from the capital, Beirut.

Nahr el-Bared

Contrary to what was widely reported in the media, this was not an ordinary refugee camp. Its origins date back to 1949, when it was created to house Palestinians who lived in poor conditions and were suffering from an intense winter in the Bekaa Valley and around Tripoli.

Because of its strategic position by the sea, the camp drew the attention of Yasser Arafat, the legendary leader of the Palestine Liberation Organization (PLO). He used it for protection from his enemies, such as Israel. Gradually, Nahr el-Bared became a true underground bunker-fortified complex, interconnected by a vast network of tunnels built by East German engineers in the early 1980s. These bunkers provided Arafat with areas for training and warehouses for food and ammunition. With the withdrawal of the PLO, the whole structure was gradually occupied by the militants of Fatah al-Islam.

After the deadly incidents between the Lebanese Army and the militants of Fatah al-Islam, diplomatic steps were attempted to put an end to the fighting and to avoid the confrontations from reaching even greater levels of violence. The Army demanded that all the militants responsible for the attacks against the Lebanese soldiers be handed over to the authorities. Unfortunately, all these efforts were unsuccessful and no agreement was reached.

**The Lebanese Army Attacks **

A war began in the early hours of June 1 when the Lebanese Army surrounded the site with regular troops. Elite squads of special forces and commandoes initiated operations against the guerrillas inside the camp to restore order in the region. At that time, there were 40,000 people living in Nahr el-Bared, a tiny narrow area of 2km² (20m² per person).

Although they were better trained, better equipped, and numerically superior, the Lebanese Army found in Nahr El-Bared an environment similar to the favelas in Rio de Janeiro and Cité Soleil, Haiti: hundreds of streets and narrow alleys forming an immense labyrinth which impeded the advance of troops even when supported by artillery and armored vehicles. Soldiers were ambushed at any moment.

They lacked the necessary experience in this type of warfare and, to make matters worse, there were no maps of the area, no photos, and no consistent intelligence information. The result was that within days the Lebanese Army began to accumulate heavy casualties of highly specialized troops.

While action continued on the ground, the LAF was fulfilling its missions of armed reconnaissance, escort, and evacuation of wounded soldiers. The latter mission being very important to boost the morale of the troops because everyone knew they would be taken care of if they were wounded in combat. Over 130 such medevac missions were made.

But LAF did not have much more to offer. The end of the Civil War in Lebanon reduced much of the country's infrastructure to rubble, resulting in the scraping of their armed forces. At the time of the fighting in Nahr el-Bared, the inventory of LAF was 23 Bell UH-1H (with half the fleet unserviceable), four Robinson R44 for basic training, and nine Aerospatiale SA.342 Gazelle which had been recently donated by UAE.

The Gazelle had arrived only a month before the start of the conflict and only three were in flight condition. These helicopters came complete with weaponry: two could be armed with .50-inch machineguns, unguided 68mm rockets, and 7.62mm machineguns. The third could be fitted with HOT anti-tank wired-guided missiles.

On July 1, the Gazelle entered service and, for the first time, performed a series of attacks on the terrorist and their infrastructure. All flight operations were concentrated in Kleyat Air Base, the former base of Dassault Mirage IIID/E, which was only 12km from the camp. The Gazelles managed to destroy some targets such as vehicles and small buildings. However, they lacked the firepower to reach the underground shelters and the Lebanese Army continued accumulating casualties without winning any major advances on the field.

Hueys into Bombers

The solution was to carry out air attacks with bombs, but Lebanon had no means to do so. In the face of this powerlessness, there emerged within the Air Force a movement to find a solution that could put an end to the conflict. The first step was to bring back into active status four of the eight surviving Hawker Hunter still stored in hangars at Rayak Air

Base (Bekaa Valley) so that they could perform attack missions. In August 2007, Hunter L-284 made some taxiing tests, but it still lacked important items such as ejection-seat explosives cartridges.

In light of these obstacles, the final solution began to take an unusual path which, if executed correctly, could work. Technicians and engineers of the LAF looked into the air bases and carefully analyzed everything that was stored since the end of civil war. Despite having sold the Dassault Mirage III to Pakistan in 2000, French T-200 400kg bombs were properly preserved and stored in a barn, as well as US 250kg Mk.82 bombs. The next step was figuring out how these could be launched, since there were no fixed wing aircraft to do that.

The solution was to convert the Bell UH-1H, a devoted workhorse that until then had been conducting only utility transport missions. After only a few studies, the technicians developed a system to launch bombs from a Huey – a system unlike any conventional method ever seen before.

The installation was quite ingenious (see photos): An aluminum plate from an M113 armored troop carrier was installed to the frame of the Huey. Bolted to this plate was the propeller shaft from a navy vessel. This shaft extended out the side of the Huey where the missile attachment arm from a Gazelle was attached. Onto this arm was fixed the weapon pylon from a Hawker Hunter on which the bombs were carried. On the Hunter, these bombs were released by a hydraulic system, but because the Huey did not have an hydraulic system, two Hunter oxygen bottles were connected to the pylon by a pipe so that compressed air was used to eject the bombs. The system could carry two Mk.82. Furthermore, the belly hook of the UH-1H could carry bombs up to 400kg.

To provide for more destructive energy, the LAF replaced the traditional explosive charge of the bombs by a material similar to plastic explosive C4. As the stock of bombs was not sufficient for the needs, the production of local bombs was initiated to ensure continuity of missions against the guerrillas.

The bomb fuse was improved by technicians and amount of explosive charge increased from 89kg (the Mk.82) to 102kg, and in some cases to 117kg. The 250kg bombs were designated LAF-GS-ER-02. Lebanon also developed a 400kg bomb, similar to French T-200, designated LAF-GS-ER-03.

All tests were conducted at Rayak Air Base because it was located in an isolated area, had an exclusively military airfield, and was one of the best equipped LAF air bases. For these experiments, the explosive was replaced by a ballast of 250kg to simulate the aerodynamic effects of the bomb. On August 7, Bell UH-1H L-1005 of the 10th Squadron which is based at Beirut AFB, had this launch system completely installed, and on that day the LAF conducted the first test at a field near Rayak.

All the tests were successful. On September 9, just two days after the start of testing, a Bell UH-1H took off from the Kleyat AFB and conducted the first mission over Nahr El-Bared. The results could not have been better.

The Hueys Attack

The effectiveness of the bombs came as a big surprise to the enemy. Not wasting any time, helicopters continually took off with two Mk.82 on each side or a 400kg bomb under the belly. In some cases, aircraft carried out missions with three bombs (two Mk.82 and one 400kg bomb).

The crew consisted of the two pilots and a mechanic. The UH-1H had to take off with minimum fuel in the tanks and without the side cargo door to minimize the weight of the aircraft. These missions were only possible using single-engine helicopters because the camp was a mere 12km from Kleyat AFB.

The satellite coordinates of the target were passed to the pilots by either ground forces or intelligence sources. Using two onboard GPS, attacks were made at an altitude of 914m or 457m with an average speed of 180km/h. The free-fall time of the bombs was 13.6 seconds and 9.6 seconds respectively.

In total, 93 bombs were dropped during 98 missions over 26 days of operation with a total of 46 hours 30 minutes of flight time. (4h 35m of which were made at night).

These operations convinced the Air Force that the 400kg T-200 was not an effective weapon because of its low penetrating power and limited destruction capability. Therefore, its use was very limited.

A Lebanese Army General, who declined to be identified, related, "I participated in 45 days of operations at Nahr el-Bared. The morale of our soldiers rose as they saw the helicopters approaching and dropping bombs. They knew this was hurrying the end of that war. Speaking of losses, we did not

suffer any incident during these operations although through the month of August more than ten helicopters operated out of Kleyat. We came to know later that the bombs caused a great impact on the guerrillas, who, locked inside their shelters, had as their only option was to await the next bomber. We did everything systematically and, for them, it did not end".

Thanks to these attacks, the fighters of Fatah al-Islam surrendered to the Lebanese Army on September 3. Altogether, more than 180 Lebanese soldiers lost their lives and another 400 were wounded, all from the special forces. For Fatah al-Islam, over 226 were killed and 220 were captured. "If not for helicopters, we might have lost more lives and taken twice as long to win this battle.", said the General.

During the conflict, the Bell UH-1H also made 76 observation, armed reconnaissance and photographic missions and 13 escort missions (with coaxial machine guns .30 - 7.62 mm). The Robinson R44 made utility transport missions and acted as a radio relay. The Hawker Hunters did not participate in the fighting at Nahr El-Bared for they were only put back into service on October 12, 2008.

Epilog

Lebanon is reconstructing and modernizing its armed forces. Currently the LAF has three Hawker Hunter FGA.9 and one T.66 for training and attack roles; one Cessna 208B Caravan (observation, reconnaissance missions and attack missions with Hellfire missiles); four Robinson R44 (training), three Scottish Aviation Bulldog (training); 23 Bell 205 UH-1H (troop employment and general bomber); seven SA-330/IAR-330 Puma (utility transport); six UH-1 Huey II, eight Aerospacia SA-342 Gazelle (attack); one Agusta Westland 139 (presidential transport) and three Sikorsky S-61N (transportation and to combat fires).

During the fighting at Nahr el-Bared, Lebanon had shown that it is able to find solutions to its problems by using the tools at hand and with the ingenuity of its technicians. It was in this situation of need that utility helicopters operated as bombers - the first time in history that this has occurred.

João Paulo Moralez (SAFCH #1712) and Vatche Mitilian, Brazil.



Figure 1

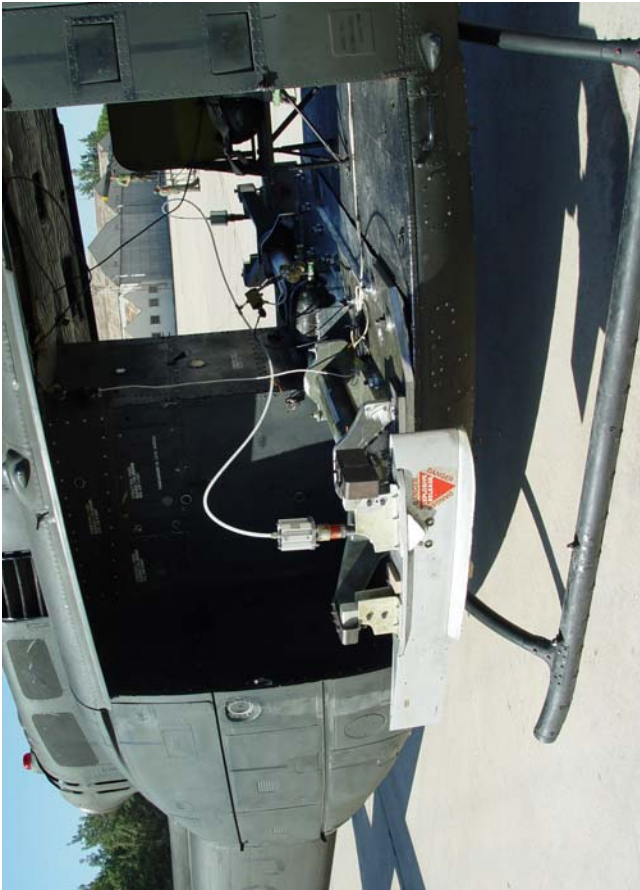


Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7

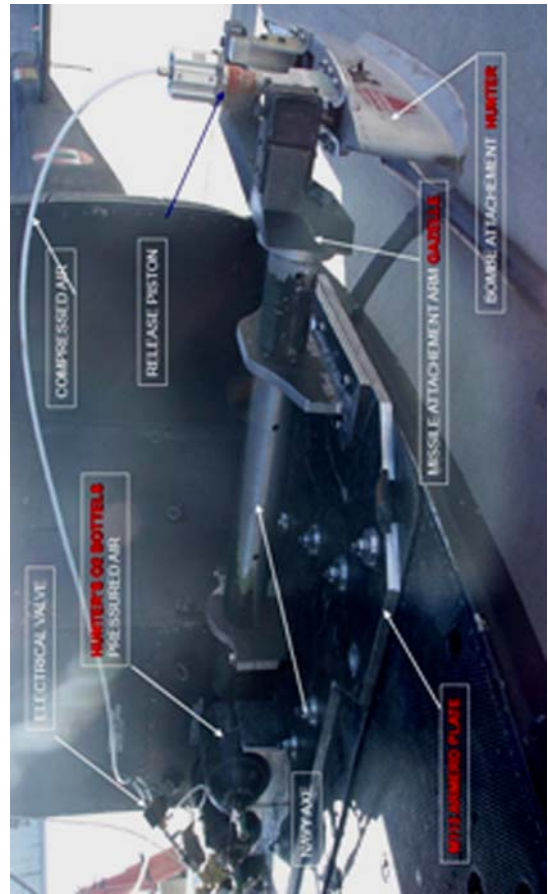
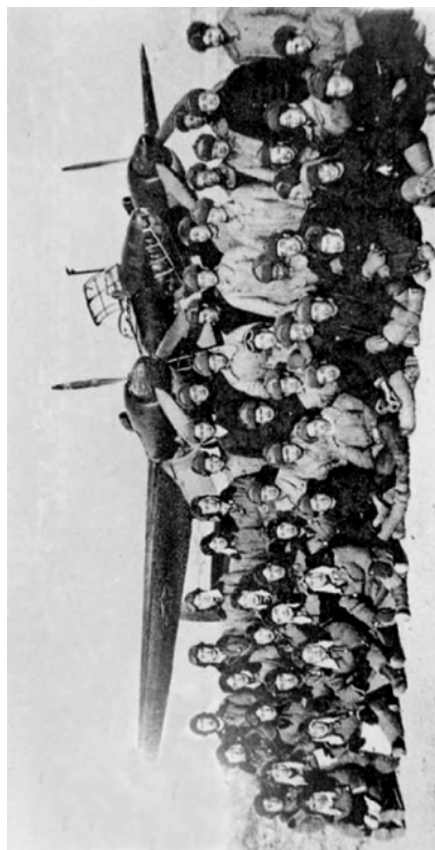


Figure 8



Gao Yueming (far right) and his crew pose before a KPAF-marked Tu-2S. Dressed for the cold – and the Tupolev's drafty interior – the crew included a pilot, radio operator/gunner, rear gunner, and navigator-bombardier. Typically the last mentioned was also the aircraft commander, in this case Gao Yueming.



The surviving aircrew members (to the left) of the 8th BAD, 24th Regiment, 1st Flying Group (squadron) from the Taehwa-do raid, posing for posterity with their unit maintenance personnel (to the right) in front of one of the squadron's early-model KPAF-marked Tu-2s.



Wang Tianbao poses with his La-11. Overnight Wang became a national hero after being credited with shooting down a USAF F-86 Sabre in the dogfight over Taehwa-do. Credited with two victories in the Korean War, afterwards Wang commanded the PLAAF's La-9-equipped 9th FAD and, after his unit was transferred to the PLA's navy, he advanced to become Commander of the East China Sea Fleet's air arm. (Author's Collection)



Figure 1



Figure 2



Figure 2



Figure 3

The Korean People's Air Force

in the Fatherland Liberation War

Part Eight: Fighting with the Chinese

The Unified Air Army

Early in October 1951 the KPAF's 1st Fighter Aviation Division completed its training on the MiG-15 and joined what was soon to become the combined Chinese-North Korean "1st Unified Air Army". The joint CVPAF/KPAF HQ at Andong had been established seven months previously, being headed by PLAAF General Liu Zhen with the KPAF's Wang Yong as his deputy. The staff was composed predominantly of PLAAF officers who had been transferred from their air force's HQ in Beijing. Although there were KPAF officers assigned to the staff as well, according to one Chinese historian, they "rarely showed up in their joint air force headquarters at Andong."

Originally, the combined HQ (CHQ) was responsible for planning (primarily signals network and aerial navigation), political, engineering, and logistics functions. The CHQ had three components: Air Defense, Bomber, and Assault Aviation Commands, each consisting of two or more air divisions. At the time the PLAAF had three MiG-9 FADs, two MiG-15 FADs, one mixed (La-11/MiG-15) FAD, one Tu-2 BAD and an Il-10 AAD operational. Excluding the MiG-9 units, which were withheld for interior air defense duties (because the Chinese realized this type was suitable only for intercepting propeller-driven bombers – See SAFO #140), the PLAAF units had exercised together on several occasions during the summer and autumn, and by October – when the KPAF 1st FAD and eight more PLAAF air divisions were attaining combat-ready status – it was time to move some of these units to the "front lines" (along the Yalu) and assume a greater role in the Communist air operations over Korea.

To control the activities of these units, on November 1, 1951, the CHQ was redesignated the 1st Unified Air Army (the Soviets referred to it as Ob'yedinyennaya Vozhdushnaya Armiya or OVA) and "operations" was added to the four original staff functions. Initially the 1st UAA CHQ controlled the operations of seven PLAAF and two KPAF aviation divisions, although permission for the latter to participate in each operation had to be obtained from Pyongyang.

The Chinese also invited the Soviets to join in the "united air army," hoping that the V-VS 64th IAK, now under Lt. Gen. Georgiy Lobov (Hero of the Soviet Union and 19-victory ace from WW2, most recently the commander of the 303rd IAD), would participate as a full partner in the Communist air operations against the UN forces in Korea. However, Stalin would not consent to having his units under Chinese authority. Consequently,

while a separate 1st UAA/CP (command post) was established only 60 yards from the 64th IAK/KP (command post) at Andong, coordination consisted only of the 1st UAA passing information to the Russians so that the latter could time their launches to cover the withdrawal and return of Chinese and Korean fighters. Even with that it is known that Soviet MiGs shot down PLAAF jets, mistaking them for Sabres on several occasions.

Nevertheless, even if command and control were not as positive as Liu or Lobov would have liked, it was a relief to the two hard-pressed Soviet MiG divisions to have such substantial reinforcements. The addition of four PLAAF (See Note 1) and one KPAF FADs brought the total number of MiG-15s in the theatre to 525, of which 290 were based along the Yalu River once the airfield at Dagushan was completed. (Note 2) The rest (some of them still in training) were stationed at more distant Manchurian bases, and all of them regularly rotated their regiments through the Andong-complex airfields in order to experience "five to seven large-scale air battles" after which they returned to their rear area bases to rest, regroup, and replace losses.

1st UAA Attempts Offensive Air Operations

The 1st UAA began combat operations on its very first day in existence, launching four MiG-15s from the 3rd FAD at Langtou on a photo-reconnaissance mission over the off-shore islands of Ka-do, Showa-do, and Taehwa-do. This unit had been operational since January 1951 and consisted of 50 early-model MiG-15s and 50 pilots. In the previous nine months the new aviators had obtained an average of 50 hours in their jet fighters and were deemed ready for combat operations. They deployed to Langtou on October 21.

That same afternoon (November 1) a similar mission was flown by La-11 piston-engined fighters of the 2nd FAD's 4th FAR, launching from Sinuiju airfield, North Korea. This unit was one of the very first in the PLAAF to achieve operational status, over a year before, and had been based near Shanghai until sent north to join the 1st UAA's Fighter Command. It deployed approximately two dozen Lavochkin fighters to the KPAF's Sinuiju airfield, joining the latter's 55th Combined Air Division. (Note 3)

The targets of these two missions were three small islands just off the coast of North Korea, about 40 miles southeast of the Yalu River's mouth. Taehwa-do was the largest and most significant, garrisoned by some 1,200 ROKA troops – which occasionally undertook commando

raids along the coasts – and the site of UNC a radio listening post gathering intelligence on a variety of Chinese and North Korean military activities. The two smaller, outlying islands were garrisoned to protect Taehwa-do.

These islands were a subject in the ongoing cease-fire negotiations, but the UNC refused to consider returning the islands to North Korean control unless the Communists agreed to territorial concessions in the Kaesong area. Therefore, to strengthen their “bargaining position” the CPVA’s Fiftieth Army planned to retake the islands in November. Eager to prove their ability to support to the ground troops, since October 13 the PLAAF’s 8th BAD had been practicing for bombing missions to accompany the amphibious assault.

On the night of November 5, the CPVA landed on Ka-do and Tan-do islands, subduing the small ROK garrisons in a three-hour battle. The next day the PLAAF launched its first-ever bombing raid, sending nine Tu-2s from the 8th BAD’s 24th Regiment to strike Taehwa-do and prevent the ROK commandos there from staging a counter-attack.

Launching from Yuhongtun airfield, near Shenyang, at 1435hrs, the 24th BAR’s wedge (“vee of vees”) formation was joined by 16 La-11s over Andong 40 minutes later. The four-ship fighter formations took station on the flanks and above and behind the bombers. At 1538hrs two dozen 3rd FAD MiG-15s began patrolling from Sonchon to Sinmi-do island, shielding the large, lower-altitude formation from interception by UNC fighters. The raid successfully plastered the ROK command post, ammunition dump, and food stores, killing 60 ROK troops and wounding another 122. All of the participating aircraft returned safely to airfields around Andong.

Nine days later (Nov 15) Taehwa-do was reportedly hit by 11 Communist bombers (this may have included KPAF night raiders) as one of the other islands was occupied. (Note 4) Afterwards the KPAF “then began launching almost nightly bombing raids of both [sic] islands.” (The KPAF’s 1st Night Bomber Battalion’s participation in these attacks will be addressed in Part 9 of this series.)

The main assault on Taehwa-do came just before midnight on November 29, with Chinese troops coming ashore in collapsible boats, supported by mortar fire from a number of North Korean junks. At about 0100hrs six KPAF night bombers joined the battle, attacking the defenders’ positions (as best they could in the dark). Resistance by the ROK commandos was fierce, so to help complete the capture of the beleaguered island, the PLAAF planned another Tu-2 attack that afternoon. Based on the success of the first raid, the 24th BAR decided to use the same times, route and attack profile in a “carbon copy” of its earlier attack.

However, this time the Chinese failed to maintain adequate signals security, so the listening post on Taehwa-

do became aware of the planned air attack and informed UNC Intelligence, which passed the information to FEAF Fighter Command. From Kimpo AB, the 4th FIG launched a maximum effort, putting 31 Sabres into the air, led by Col Benjamin S. Preston, the group commander.

This time the PLAAF’s mission did not go as prescribed.

The nine Tu-2s took off a little early and, joining quickly, headed for their rendezvous with the 16 La-11s, five minutes ahead of schedule. Meanwhile, as the 3rd FAD MiGs took off on time at Langtou, Preston was leading his Sabres northwards at low altitude, masking their approach from Soviet radars by flying “behind” the rugged mountains of Korea’s central highlands and maintaining radio silence all the way. Approaching the Yalu, Preston turned his formation westwards, climbing for altitude, and spread into an attack formation: the 334th and 336th FISes – 18 F-86s total – fanned out line-abreast with eight 335th FIS Sabres taking a high cover position behind them, and the other five angling to the south to cover the main body’s egress.

Below and to the right, at 8,000ft altitude (2,500m), Preston spotted the bomber formation headed south along the North Korean coast, flying along at a stately 180 knots. Leaving the third squadron to counter any MiGs, Preston turned right and led the 336th FIS down in the initial attack, with Maj George A. Davis, Jr., and his 334th FIS following from the south.

Diving from high altitude, Preston’s initial attack came in too fast, shooting and overshooting, zooming to reposition and then re-attacking. A swirling dogfight ensued. Seeing no MiGs in the area, Maj Winton “Bones” Marshall led his eight 335th FIS “Chiefs” down to join the battle. Preston, Marshall and another “Chief” pilot destroyed La-11s but in the confused mass of turning fighters young Wang Tianboa managed to get a telling burst of 23mm cannon fire into a rapidly approaching Sabre jet, shattering the canopy and wounding Marshall in the head, neck and hands. The American was able to safely return to base, but Wang Tianboa was credited with a “kill” and almost immediately became a national hero.

While Preston and Marshall’s squadrons “tied up” the Lavochkin escorts, Davis’s eight 334th FIS “Fighting Eagles” decimated the lumbering bombers, two of them falling to his guns, and another pair to two of his lieutenants. Under great duress from the savage Sabre attacks, the Tupolev formation closed up bravely and determinedly continued to their target, but they released their bombs early, most of them exploding on the beach. No damage was done.

About this time the Chinese MiG-15s were beginning their patrol at high altitude. They were approaching Sinmi-do when the leader of the 7th FAR’s 3rd Flying Group (squadron), Mu Dunkang, spotted the tumultuous air battle below. Anxious to save his comrades he dived

his six MiGs into the fracas. Mu Dunkang attacked one of the 334th FIS Sabres, damaging it, but Davis quickly swooped to the rescue, riddling the MiG – it caught fire and fell into the sea, killing the pilot.

By this time the F-86s, whose low-altitude ingress had used much of their fuel, had to disengage and head for Kimpo, four of them damaged in the mêlée. The five surviving Tu-2s landed at Langtou at 1530hrs, shocked at their losses. (Note 5) Of 16 bomber crewmen, only one navigator survived the carnage, and all four fighter pilots were killed in the battle. The ROK evacuated Taehwa-do the following day, HMS Cockade covering the operation and being hit once by a Communist shore battery.

Overall, the small campaign to capture three islands was a success, but the PLAAF's experience was disheartening. Realizing that their dreams of conducting offensive air operations had no hope in the face of USAF aerial superiority, in December General Liu disbanded both the Bomber and Assault Aviation Commands, their component units returning to their respective national air arms for continued training. From this point on, the Chinese-led 1st UAA would only attempt air defense operations along the Yalu River.

1st UAA's Initial Air Defense Operations

The Taehwa-do operations notwithstanding, learning from the 4th FAD's second discouraging combat experience, (Note 6) the PLAAF's 3rd FAD was determined to avoid engaging USAF Sabres and planned to only seek out small flights of enemy fighter-bombers. The 1st UAA's agreement with the co-located 64th IAK was that the Soviet MiGs would engage any F-86 formations present and would launch additional fighters to cover the Chinese formations' return to base (RTB). Initially this approach seemed successful with the 3rd FAD claiming five victories and three UNC aircraft damaged in five combats during the first eight days of operations.

However, the confidence created by these initial successes encouraged the PLAAF leadership to urge the unit to "operate independently of the Soviet air units and to seek and challenge large enemy formations and F-86s." To bolster the division, it was soon joined by the newly-trained 14th FAD – 43 pilots flying 40 early-model MiG-15s – who were assigned to attack small flights of enemy fighter-bombers under the protection of the more experienced 3rd FAD.

This arrangement was a formula for disaster because neither unit – even together – could match the battle-hardened Sabre pilots. On December 13 a formation of 14th FAD MiG-15s, seeking to engage US fighter-bombers, was intercepted from behind by a large group of F-86s and another massacre ensued. Within six minutes seven Chinese MiGs were shot out of the sky – with another two damaged – the PLAAF's highest daily loss thus far in the conflict. Fortunately, the MiG's ejection

seat worked in most of the cases and six of the pilots survived to fight another day.

On January 14, 1952, the 3rd FAD was rotated back to Shenyang having flown 2,319 sorties and fought in 23 air battles. The division had lost 16 MiG-15s, but this was countered by the claim of 55 UN aircraft shot down, including 17 F-86s. Thus, their first combat experience was viewed as a success, albeit an expensive one.

The KPAF 1st FAD Joins the Fight

On November 7, the KPAF joined the Communists' defensive air campaign when the 1st FAD deployed its 2nd FAR, reinforced to 30 MiG-15s, to the newly-completed airfield at Uiju, North Korea, built along the Yalu River just upstream from Sinuiju.

The new airfield had a 7,218ft (2200m) concrete runway paralleling the river, with large concrete pads at each end for alert aircraft, connected by a long curving concrete taxiway arcing around the southeast side. Along this taxiway were 20 sandbagged revetments, each large enough for two MiG-15s. The alert pads were protected by sandbagged AA gun emplacements, two on each side, with additional AA guns scattered around the perimeter. This encompassed a collection of wooden buildings providing administrative, supply, and barracks facilities. The pilots, however, were billeted five miles (eight km) northeast, in a cluster of farmhouses.

The 2nd FAR was commanded by Col. Tae Kuk-Sung, a former Yak-9P pilot. Tae had been one of the first pilots trained by the Russians, and one of the first to fly the Yak-9P. He was very active in the 56th GFAR's operational squadron and, being a superior pilot, he survived numerous battles with America jet fighters. Tae piloted one of the few Yak-9Ps to get airborne during the US Navy's attacks on Pyongyang airfield, where he fought USN F9F Panthers, and he was involved in the large dogfight near Taejon in which one F-80C was damaged so badly it eventually crashed while landing. During this engagement, his Yak-9P was hit repeatedly by .50-cal fire, forcing him to bail out. (Note 7)

Upon arrival, at Uiju, Tae established an air defence alert posture of three levels. Usually eight aircraft, parked on the alert pad at the downwind end of the runway, were at Alert One: pilots in their cockpits, ground crew immediately available. At Alert Two, the pilots and ground crew had to be in the revetments with their aircraft. Alert Three was more relaxed, with the pilots available in the rest area southeast of the airfield.

Scramble orders came from the 1st UAA/CP at Langtou to the regiment's mobile control vehicle parked on the alert pad. Tae Kuk-Sung could order his MiGs to launch from any of the three alert postures, shooting flares into the air to signal the Alert One and Two jets to start engines and calling the Alert Three pilots via telephone. Once airborne the MiGs would angle across the Yalu and

climb steeply within “the Manchurian sanctuary” to get above the UNC raiders’ altitudes before turning southeast, back into DPRK airspace. After take-off they switched to GCI radio frequency and would be vectored by the Soviet V-VS (64th IAK/114th Radio-Technical Regiment) controllers, under direction of the 1st FAD commander, General Kang Dae-Yong.

The North Korean MiGs flew their first combat mission the first day after arrival, on November 8, 1951. The 24 MiG-15s turned south across the Yalu at high altitude, but there were no F-86s in “MiG Alley”. Several of these familiarization flights were flown during the first week to increase the experience of the young KPAF pilots. At this point, the inexperienced North Koreans had approximately 50 hours of jet time, yet they faced battle-hardened American Sabre pilots, most of whom were WWII veterans, all of which had more than two years flying jets and many were approaching a year in combat in Korea.

These sorties were valuable for increasing the young pilots’ formation skills, orientation to the local area, and confidence of flying in the “combat zone”. However, they were not without risk: On the fourth mission, one pilot experienced a flameout of his RD-45 turbojet and could not get it restarted. He attempted a “dead stick” landing at Uiju, but overshot the runway, crashing into an AA gun emplacement at the far end and was killed.

The KPAF’s first encounter with F-86 Sabres was on November 15 when eight MiG-15s headed south towards Pyongyang at 39,370ft (12,000m) flying through thin cirrus clouds. A pair of F-86s managed to climb unseen to near their service ceiling (about 42,500ft/12,955m depending on conditions) and curved in behind the MiGs, attacking from the six-o’clock. The surprised Koreans scattered while the Sabres “blew through”, diving away southwards. As the MiGs climbed back to rejoin, four other F-86s appeared below them but could not match the Soviet-made jets’ climb-rate or ceiling. Both sides disengaged and returned to base (RTBed).

American photo-reconnaissance discovered the presence of MiG-15s at Uiju three days after their arrival and FEAF Bomber Command and Fifth AF began organizing a coordinated strike using B-29s, B-26s, and fighter-bombers. Meanwhile, a week later Capt Kenneth D. Chandler (336th FIS) and his wingman, 1Lt Dayton W. Ragland, spotted the eight silver MiGs parked on the alert pad at the south end of Uiju’s runway and dived down to strafe them.

The strafers caught the North Koreans completely by surprise, even though the commander was aware (from the Langtou CP) that dogfights were happening overhead. One MiG-15 was hit in the fuel tank and burst into flames (the pilot had just climbed out for shift change), and was totally destroyed, while two more were badly damaged.

One pilot, Senior Lieutenant (Snr Lt) Chung Yong-Tae, was killed in his cockpit and another wounded.

During the next few nights FEAF Bomber Command dispatched a dozen B-29 sorties (98th BW), dropping some 80 tons of bombs, to knock out Uiju. Flying singly and using the new AN/APN-3 SHORAN (SHORt RANGE Navigation) electronic navigation and bombing aid system, these missions delivered 100lb and 500lb (45 and 227kg) bombs to crater the runways and blanketed the dispersal areas with air-burst 500-pounders. A particularly devastating raid on the night of November 24/25 put 474 craters in the runway, precluding further jet operations.

With the USAF bombers effectively grounding the regiment, on December 15, Gen. Kang decided to withdraw the unit to Langtou. It took 5,000 civilian laborers three days to fill the 20-foot (6.5m) craters and clear the rubble from the runway, after which the 2nd FAR departed for their new base.

During their time at Uiju, the 2nd FAR claimed to have shot down a USAF Shooting Star and an ROKAF Mustang for the loss of three MiG-15s in combat. The first incident correlates best with the loss of F-80C S/N 49-531 on November 27 when a four-ship from the 36th FBS (8th FBG) was reportedly attacked by 18 MiG-15s. (Note 8) 1Lt Rafael A. De Breuil’s jet was last seen in a 45° dive, jinking to avoid a pursuing MiG’s cannon fire. De Breuil’s crash was not observed and he was listed as MIA. The ROKAF F-51D (S/N unknown), piloted by Maj Sin Cheol-Su, was lost on December 15, reportedly to AA fire. The victors in both claimis are, as yet, unknown.

At Langtou the KPAF’s 1st FAD joined the Soviet 324th IAD at the west end of the airfield while the PLAAF’s 3rd FAD was based at the east end. (Note 9) Because it was considered too time consuming to taxi to the other end of the airfield, the Russians and Koreans always took off to the east and the Chinese took off to the west, regardless of the wind.

The first significant mission flown from Langtou by KPAF MiGs was on New Year’s Day, 1952. Knowing that the USAF was going to “stand down” on the holiday, just as they had on Christmas, Col. Tae Kuk-Sung led two dozen MiG-15s aloft to patrol southwards. Climbing to 42,650ft (13,000m), the “train” (six four-ship formations in trail/line astern) turned south, passed over Pyongyang, and flew to overhead Sariwon airfield, about halfway between the DPRK capital and the front lines.

There, Tae pointed out Seoul in the distance. Lt No Kum-Sok, a member of the regiment’s 3rd Battalion, flew in this mission and recalled later, “What a strange way to celebrate New Years Day, I viewed the two warring capitals from the sky.”

Doug Dildy (SAFCH #844), USA.

End Notes

1. These were the operational all-MiG-15 3rd and 4th FADs in Liaoning Province, the mixed La-9/MiG-15 2nd FAD at Shanghai, and the still-in-training MiG-15-equipped 14th FAD at Beijing.
2. Dagushan (also spelled Takushan), a brand-new airfield with a 7,000ft concrete runway, was located 50 miles (80km) down the coast west of Antung.
3. There is no record available specifying the 4th FAR's deployment location. Sinuiju is most likely the site base on the facts that 1.) the 4th FAR moved to a front-line airfield at the same time the KPAF 1st FAD moved to Uiju and 2.) USAF photo-reconnaissance identified an increase from 38 propeller-driven aircraft at Sinuiju (KPAF's 55th CAD) to 64 at this same time.
4. The primary source for this account is Dr. Xiaoming Zhang's excellent *Red Wings Over the Yalu: China, the Soviet Union and the Air War in Korea* (Texas A&M Press, 2002), but it does not mention second assault/attack in the area, an event covered in the US Navy's official history of its involvement in the Korean War. In his book, *Sabres Over Mig Alley: F-86 And The Battle For Air Superiority In Korea*, Dr. Kenneth P Werrell asserts that the ground and air attacks on Ka-do were repeated on November 14, supported by strafing attacks by Yak-9 fighters, and that 11 bombers raided Taehwa-do again the next day. Referencing the USN history, Werrell may be reporting an attack on Showa-do instead.
5. In a telling example of the lack of coordination between the 1st UAA/CP and 64th IAK/KP, the latter's 196th IAP launched a 16-aircraft sweep of "MiG Alley" that was returning to Langtou at the time the F-86s were climbing for altitude, approaching from the east. The Soviet pilots did not see the F-86s (but were seen by the Sabre pilots), which passed beneath them as they RTBed, low on fuel.
6. After a disastrous initial experience the previous winter, the PLAAF 4th FAD was retrained and sent back into combat from September 12 through October 19, 1951. Because of the Chinese pilots' inexperience, they were supposed to be employed against UNC fighter-bombers and USAF bombers while the Soviet MiG-15bis took on the F-86s. During their five weeks of operations this was frequently not the case. Beginning with 55 MiG-15s and 56 pilots, the 4th FAD flew 508 combat sorties, engaging in ten air battles and losing 14 aircraft in the process. FEAF records show that no UNC aircraft were lost or damaged in these engagements.
7. Col Tae Kuk-Sung was assisted by three Soviet advisors, headed by a chief who oversaw command and flying operations. The other two assisted with weapons and ordnance and with the jets' instrumentation.
8. However, Soviet sources claim that two F-80Cs were destroyed that day near Jyunan by pilots from 303rd IAD/523rd IAP. PLAAF claims for this date are unknown.
9. KPAF defector No Kum-Sok maintains that the MiG-15s of the PLAAF's 2nd FAD – specifically, the 6th FAR – were stationed at the east end of the airfield, but this is not confirmed in Chinese sources.

Additional Sources

In addition to sources already researched for this series, these five contributed to the writing of this portion of the KPAF article series:

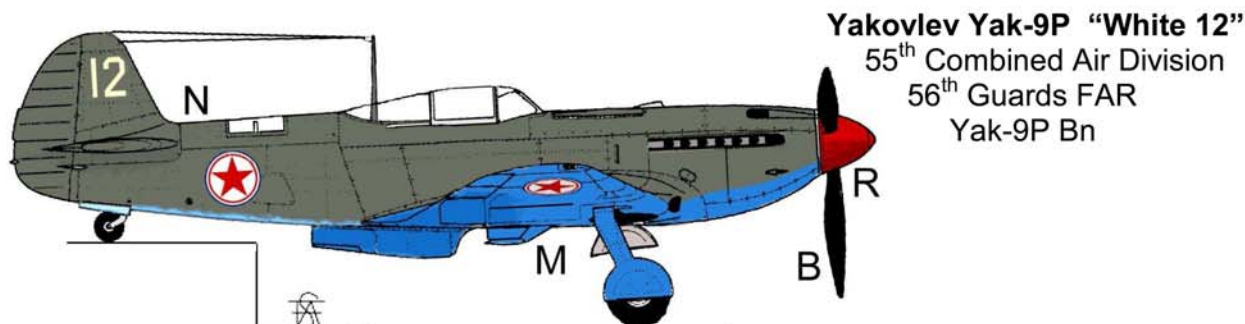
1. Bruning, John R., Jr., *Crimson Sky: The Air Battle for Korea*, (Dulles, VA: Brassey's, 1999).
2. Halliday, Jon, "Air Operations in Korea: The Soviet Side of the Story", *A Revolutionary War: Korea and the Transformation of the Postwar World*, William J. Williams, ed., (Chicago: Imprint Publications, Inc., 1993).
3. Rottman, Gordon L., *Korean War Order of Battle: United States, United Nations, and Communist Ground, Naval, and Air Forces, 1950-1953* (Westport, CT: Praeger Publishers, 2002).
4. "Russian Claims from the Korean War 1950-53" (also known as "The 1059 Document" because it lists the 1,059 Soviet victory verifications of USAF aircraft shot down in the Korean War), translated and provided to the author by Stephen L. Sewell.
5. Werrell, Dr. Kenneth P., *Sabres Over Mig Alley: F-86 And The Battle For Air Superiority In Korea*, (Annapolis, MD: Naval Institute Press, 2005).

Captions for Photos on Pages 128

1. The early-model KPAF-marked Tu-2-2M-82 "Yellow 20" currently residing in the Chinese Aviation Museum at Datangshan. This initial version of the Tu-2 was powered by two 1,450hp Shvetsov M-82 (later ASH-82) radials turning three-bladed AV-5-167A propellers. The PLAAF's early-model Tu-2s were inherited from the VVS's 829th SAP (Mixed Aviation Regiment) at Shanghai in mid-1950. (Max Smith via author)
 2. The Datangshan museum also includes Tu-2S (*Seriinyi*, or 'Series') "White 0462". The Tu-2S was the main production version, powered by fuel-injected 1,850hp ASH-82FN turning four-blade, clipped-tip AV-5V-21 propellers and capable of carrying four rows of three bombs (totalling 1,000kg/2,205lb) in its long bomb bay. The PLAAF's Tu-2Ss were passed from the VVS's 162nd BAD after training was completed at Siping, Jilin, in mid-1951. (Ley Reynolds, SAFCH #1726)
 3. A total of 311 Tu-2s (plus 29 Tu-2U trainers) were provided by the USSR during 1949-1952, most of them being the Tu-2T torpedo-bomber variant. These were powered by the same ASH-82FN radial, but to overcome overheating problems at low altitude and carry overweight loads (two 966kg/2,130lb torpedoes), the large spinners were discarded and larger diameter AV-5LV-166B four-blade tapered/rounded tip propellers were substituted. (Yu Ming via author)
 4. The business end of the Tu-2T. The ASH-82FN engine – plainly visible here – was Shvetsov's version of the Wright R-1820 Cyclone 14-cylinder two-row radial. Also evident is the suspension gear beneath the wing root for the 966kg/2,130lb 45-36-AN torpedoes. During the mid/late 1950s, the PLA-Navy's 4th and 5th Flying Groups (Regiments) were torpedo bomber units equipped with the Tu-2T. (Ley Reynolds, SAFCH #1726)
- Source: All technical information here is from V. B. Shavrov's *History of Aircraft Construction in the USSR, Volume 1*, pages 166-182.

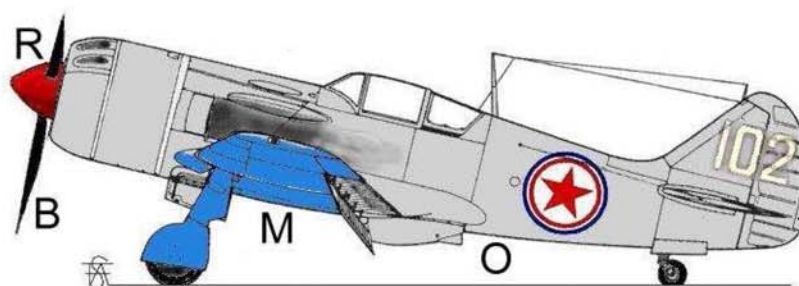
AIRCRAFT OF THE KOREAN PEOPLE'S AIR FORCE

By Frans Scheve, SAFCH #890



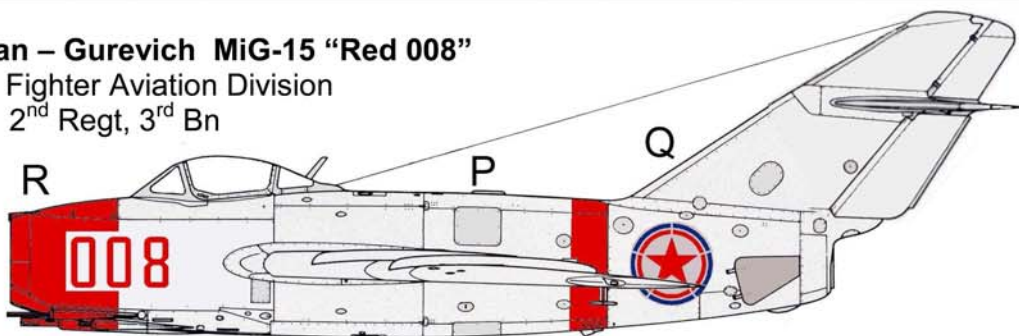
"White 12" is apparently the sole survivor of the 141 Yak-9s known to have been provided to the DPRK by the USSR in 1949-50. Resplendent in its V-VS-typical "air superiority gray" color scheme, it is now on display in the Victorious Fatherland Liberation War museum (VFLW) in Pyongyang.
SOURCE: Photograph from VFLW museum.

Lavochkin La-9 "White 102"
55th Combined Air Division
56th Guards FAR
La-9 Bn



Forty La-9s were also provided to the KPAF, serving in a fighter training regiment at Yanji, PRC, and alongside the Yak-9Ps in the 56th FGAR at Sinuiju, DPRK, from January-October 1951. Also residing in the VFLW, it was previously painted identically to the Yak-9P, with a full azure blue belly, but now is seen as depicted here.
SOURCE: Photograph from VFLW museum.

Mikoyan – Gurevich MiG-15 "Red 008"
1st Fighter Aviation Division
2nd Regt, 3rd Bn



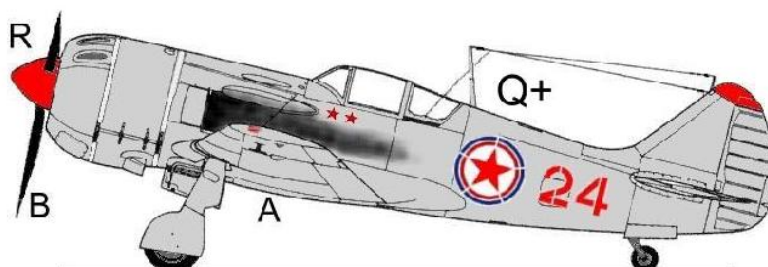
Some 54 early-model MiG-15 transferred from the V-VS 151st GviAD on October 7, 1951. The next month the newly established 1st FAD deployed one regiment to Uiju airfield, DPRK, to participate in joint PLAAF/KPAF air operations under the 1st United Air Army. This jet was flown by Lt No Kum-Sok until replaced by an MiG-15bis near the end of 1952, then it was transferred to the newly formed 3rd FAD at Yanji. It was lost early in 1953 due to a flameout of its RD-45F engine at low altitude; the pilot was killed.
SOURCE: *A MiG-15 to Freedom*, pages 92, 102, 107.

Explanations of drawing notes. Notes correspond to previous SAFO pages on the subject. Additional notes :
M- Azure colored wing underside. **N-** Top-side painting, matt medium green-grey overall, **O-** Light grey camo overall.
P- Metal finish overall. **Q-** National insignia in blue & red only, background is bare metal. **R-** Red nose / (prop)cone.

AIRCRAFT OF THE PEOPLE'S LIBERATION ARMY AIR FORCE

By Frans Scheve, SAFCH #890

Drawings are based on photos from the China Aviation Museum (CAM), via SAFCH-member Ley Reynolds.



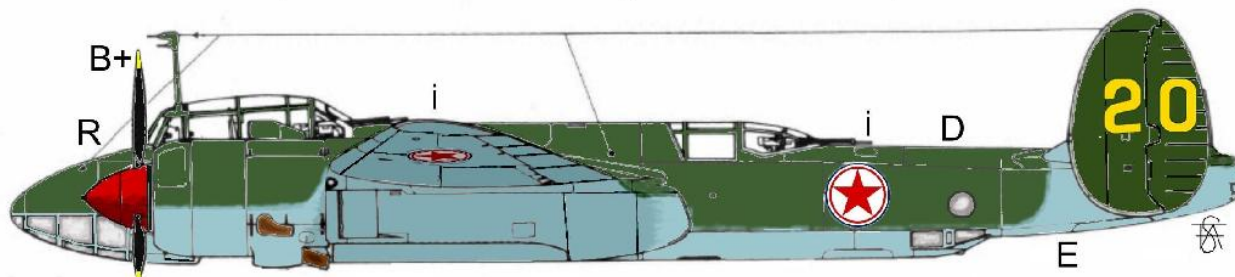
Lavochkin La-11 "Red 24"
2nd Aviation Division
4th Fighter Aviation Regiment

24

The PLAAF established its single regiment of La-11 fighters in June 1950 when the V-VS 351st IAP transferred 39 of the type to the 4th FAR after training its pilots. "Red 24" represents the aircraft of Wang Tianbao, who was credited with destroying one F-86 Sabre during the November 30, 1951, air battle over Taehwa-do island. In June 1952 this unit was transferred to the PLA-Navy to form part of the new Naval Air Force (1st Div/1st Group), while Wang Tianbao later commanded the La-9-equipped 9th FAD, and with it transferred to the PLA-N (as the 6th NAD) in 1955, continuing to advance to become the Air Arm Commander of the East China Sea Fleet. (Drawing note : Q+ = RWB insignia, with stenciling marks.)

8th Aviation Division, 24th Bomber Aviation Regiment

Tupolev Tu-2S "Yellow 20"

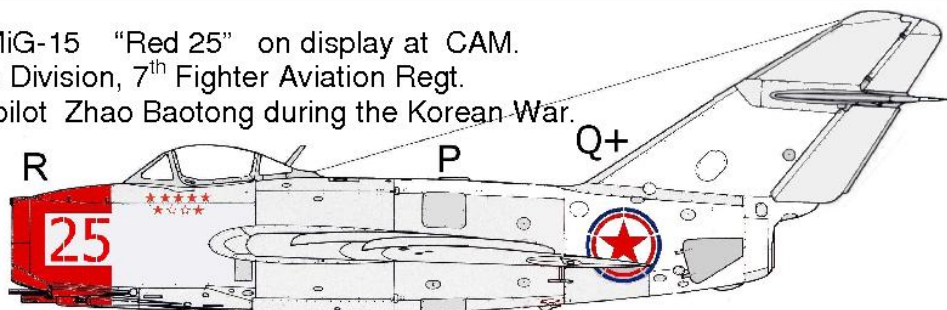


The 8th AD was the PLAAF's first bomber division, established at Jilin in December 1950 and, after being trained by the V-VS 162nd BAD, it received that unit's 62 Tu-2s. After its defeat over Taehwa-do island, it became a torpedo bomber unit and was transferred to Shanghai's Hongqiao airport and the new Naval Air Force (1st Div/4th Group) on June 27, 1952. It flew with some distinction in the Taiwan Strait Crisis during November, 1954, resulting in the PRC's successful occupation of the Tachen Islands.

Mikoyan-Gurevich MiG-15 "Red 25" on display at CAM.

PLAAF , 3rd Aviation Division, 7th Fighter Aviation Regt.

Personal aircraft of pilot Zhao Baotong during the Korean War.



The 3rd AD was the PLAAF's second all-jet fighter division, established at Shenyang in November 1950 and was the first to operate under the 1st UAA. Representing the aircraft of Zhao Baotong (Chao Bao Tun), "Red 25" sports seven "solid" stars denoting the confirmed victories of the PLAAF's highest scoring ace in the Korean War. The two "empty" indicate enemy aircraft credited by the PLAAF as damaged.

Martin's B-26 Marauders supplied to the Free French Air Force during WWII

Wai Yip

The B-26 was originally designed by Glenn L. Martin Company as a medium bomber for the United States Army Air Forces (USAAF) in World War II. In addition to USAAF, the B-26s were also supplied, under lend-lease agreement, to the Royal Air Force (RAF) and some of which were in turn transferred to the South African Air Force. At the Anfa Conference in Morocco in January 1943, President Roosevelt agreed to supply the French, which were to fight on the Allies side, materiel required for three armored and eight infantry divisions, as well as 1000 airplanes (500 Fighters, 300 Bombers, and 200 Transports). The recapture of the former French territory in North Africa in early 1943 by the United States and its Allies marked the beginning of the reorganization and re-equipment of the French air units which fell into two camps: the Free French Air Force (FFAF) of General de Gaulle, and the French North African Air Force (FNAAF) under the authority of General Giraud. In the summer of 1943, the FNAAF became an integral part of the FFAF. As part of the re-equipment effort, B-26B and B-26C medium bombers were then made available to the FFAF and the training on the B-26 began in September 1943. When the training was finished, two existing FFAF bombardment squadrons transitioned to the B-26s and four new bombardment squadrons were formed when the B-26s were received. These bombardment squadrons began operational with the B-26s in March 1944. When the B-26Gs were available in 1944, they were also supplied to the FFAF. (See Reference 5 for more details on the FFAF) These six bombardment squadrons were:

FFAF squadron # (Name)	Sqdn Operational Date	Types of aircraft used
GB II/20 "Bretagne"	1/1942	Martin 167F, Lysander, Blenheim, B-26 (10/43)
GB I/22 "Maroc"	4/1943	LeO451, B-26 (4/44)
GBI/19 "Gascogne"	6/1944	B-26
GB II/52 "Franche- Comte"	8/1944	B-26
GB I/32 "Bourgogne"	9/1944	B-26
GB II/63 "Senegal"	9/1944	B-26

Three of these Free French squadrons were grouped under the 31st Escadre (equivalent to an Air Group in USAAF system) and the remaining three were grouped under the 34th Escadre. They were both attached to 42nd Bomb Wing of Mediterranean Allied Tactical Air Force (MATAF) which was under the control of the Mediterranean Allied Air Forces (MAAF). They were

transferred to the First Tactical Air Force when it was formed in November 1944.

How the B-26s were passed onto the FFAF

USAAF records document two types of transfer. First type of transfer was the diversion of B-26s originally assigned to USAAF inventory. Some of these B-26s were transferred directly to the FFAF and did not serve with USAAF in any combat role. Others had served with the USAAF in some combat capacity and were then transferred to FFAF. These B-26s are often referenced in this article as "diversion from USAAF inventory". The second type of transfer is the direct assignment of the newly-built B-26s from the factory to the FFAF. This type of transfer can often be identified in the USAAF records with specific Free French Project numbers. The USAAF was only involved in ferrying them from the factory to North Africa.

In the summer of 1944, the supply of the B-26s originally assigned to the FFAF was behind schedule and so as not to have the trained Free French air crew idling without any bomber, General Arnold approved the division of B-26s originally assigned to the USAAF to the FFAF.

Three variants of B-26 were supplied to the FFAF. They were B-26Bs, B-26Cs, and B-26Gs. Review of USAAF records shows that no B-26F was supplied to the FFAF. The number of each variant of B-26 supplied to the FFAF, as determined from the USAAF records by the author, are listed in the Table below:

Type	Diverted from USAAF inventory	Specifically for France under lend- lease	Subtotal
B-26B	55	0	55
B-26C	42	55	97
B-26F	0	0	0
B-26G	23	113	136
subtotal	120	168	288

Markings of FFAF B-26s

FFAF B-26 markings include the tri-color (blue-white-red) roundel circled by a yellow trim on the rear fuselage and on both wings and the tri-color fin flash on the vertical tail fin. There was a blue band on the rear fuselage close to the tail gunner to identify that it was a 31st Escadre's B-26. Similarly, those with the green band belonged to 34th Escadre. Unlike the aircraft directly purchased from the US before the WWII had started, the FFAF did not assign its own serial numbers to the B-26s and the USAAF serials were retained. Large two-digit "battle numbers" were painted on most of the B-26s supplied to the FFAF and also on those operated by the USAAF. As explained in

Reference 4, these so called “battle numbers” were to ease the identification of individual B-26s within an air group and were a practice of the USAAF. Since the Free French B-26 squadrons were under the US control, this practice was also applied to the Free French B-26s. Battle numbers of B-26s under 31st Escadre were in blue and battle numbers under 34th Escadre were in green.

Disposition of FFAF B-26s after WW II

After WWII, the FFAF’s B-26s should have been returned to the US as they were lend-lease equipment. However, US did not want them either as there was little documentation in the USAAF records of their return. They were all scrapped shortly after WWII in Europe. On July 5, 1945, President Truman directed that the issue to Allies of lend-lease military equipment would be limited to that which would be used in the war against Japan exclusively. This essentially terminated any addition transfer of B-26s to the FFAF. However, AF records show that a small number of B-26Bs and Cs were transferred to FFAF in August 1945 and some as late as 1946. According to Reference 7, between July and September of 1945, U. S. – equipped FFAF units were allowed to rely on American supply installations for spare parts and maintenance items. After President Truman’s second directive in September 1945 which virtually ended all lend-lease aid, the transfer of equipment such as airplane would be subject to negotiation. Reference 2 states that some of the B-26s were used in the transport role under squadron GB I/34, “Bearn” for a short period of time (until 1946) after WWII. This might explain this additional transfer in late 1945 and in 1946, possibly as spares to support this operation. One B-26C and one B-26G stayed on for an extended period of time as test-beds for the SNECMA Atar turbojet.

Type	USAAF serials	Rmk (Ref.3)
B-26C	42-107717	To F-WEPO, F-ZVLD
B-26G	43-34584	To F-WBXM, F-ZVLA

Final Tally of FFAF B-26s

Per Table 5 (Page 402) in the Conclusion chapter of Reference 7, 330 medium and light bombers were provided to the FFAF through lend-lease. These 330 counts appear to have come from “The United States Army in World War II Statistics –Lend-Lease”, dated December 15, 1952. In this official USAAF document, it further breaks down that 164 were medium bombers, all B-26s, and 166 were light bombers, comprising of one A-28/A29/Hudon type, 67 A-31/A-35 type, and 98 “other models” which the author was able to identify as Douglas A-24Bs. (164 medium bombers + 166 light bombers = 330 bomber aircraft supplied to the Free French)

However, the 164 counts are just way too low comparing with what the author has identified from the USAAF record and the list of B-26s operated by the FFAF in Appendix III of the authoritative book, “Les Maraudeurs Francais” by Patrick Ehrhardt. The author believes that 164 counts account only for those B-26s that were officially transferred to the FFAF under specific lend-lease project numbers and did not include those that were “loaned” to the Free French or diverted from USAAF inventory (though they were still under provision of lend-lease). From the USAAF records, the following numbers of newly-built B-26s (as listed in Tables 1 and 2) were specifically assigned to the Free French with specific lend-lease project numbers:

Type	# supplied
B-26B	(0)
B-26C	(55)
B-26G	(113)
Total	168

The 168 counts come very close to the 164 counts documented in the US Army in WW II statistics document mentioned above.

Also, the author is unable to reconcile his list of B-26s operated by the FFAF with the list in Mr. Ehrhardt’s book. The author rechecked USAAF document and could not find any entry on the transfer of some of these B-26s to the Free French listed in Mr. Ehrhardt’s book. The author believes that these additional B-26s might have just been “loaned” to the Free French. They might still have been under the control of the USAAF and so these transfers were not documented.

In summary, 288 Martin B-26 Marauders were identified from USAAF records to have been transferred to the FFAF/French Air Force under lend-lease between 1943 and 1946. Some were initially loaned to the FFAF before their lend-lease transfer. They are included in the 288 counts. The author was unable to determine the number of B-26s just loaned to the FFAF and later returned to USAAF. These B-26s are not included in the 288 counts.

Loaned B-26Bs and B-26Cs (which were eventually transferred to FFAF through lend-lease)

Between 1943 and 1944, a number of B-26Bs and B-26Cs were “loaned” to the FFAF mainly for training purpose. Eventually USAAF decided that they were no longer needed and were transferred to FFAF as part of the lend-lease. USAAF records, unfortunately, only show the lend-lease transfer dates and not the dates that were loaned to FFAF. (Note: In Mr. Ehrhardt’s book, additional B-26s were identified but the author cannot confirm their transfers based on USAAF documents)

According to References 7 and 9, three transfers of this nature took place between late 1943 and mid 1944:

October 1943 13 B-26Bs
 February 1944 8 B-26Bs
 July 1944 21 B-26Bs & B-26Cs

These loaned B-26Bs and B-26Cs, identified in Reference 9, are listed in the following tables for reference.

Serial numbers B-26B	Loan date	Lend-lease transfer date
41-17829	10/43	12/44
41-17851	10/43	12/44
41-17959	10/43	12/44
41-17968	10/43	12/44
41-18010	10/43	12/44
41-18027	10/43	12/44
41-18036	10/43	12/44
41-18045	10/43	12/44
41-18056	10/43	12/44
41-18074	10/43	12/44
41-18083	10/43	12/44
41-18088	10/43	12/44
41-18100	10/43	12/44

Serial numbers B-26B	Loan date	Lend-lease transfer date
41-17753	2/44	12/44
41-17758	2/44	12/44
41-17823	2/44	12/44
41-17844	2/44	12/44
41-17918	2/44	1/45
41-17923	2/44	12/44
41-18033	2/44	12/44
41-18092	2/44	12/44

Serial numbers B-26B	Loan date	Lend-lease transfer date
41-18061	7/44	11/44
41-18189	7/44	1/45
41-18202	7/44	1/45
41-18203	7/44	11/44
41-18265	7/44	1/45
41-18286	7/44	11/44
41-18307	7/44	11/44
41-31594	7/44	11/44
42-96006	7/44	1/45
B-26C		
41-34907	7/44	11/44
41-34977	7/44	11/44
41-34982	7/44	3 or 5 /46
41-34984	7/44	11/44
41-35007	7/44	11/44
41-35024	7/44	11/44
41-35027	7/44	11/44
41-35050	7/44	11/44

41-35131	7/44	11/44
41-35135	7/44	11/44
41-35140	7/44	11/44
41-35186	7/44	11/44

Note: It appears that in addition to these loaned B-26Bs and B-26Cs listed above, more B-26Bs and Cs were diverted from USAAF and transferred to FFAF between late 1943 and mid-1944 based on the author's findings. They were most likely transferred to the FFAF for training purpose. Some were as early as September 1943!

B-26Bs transferred to FFAF through lend-lease

The following 55 B-26Bs were identified from AF records to have been supplied to the FFAF and all of which were diverted from USAAF inventory at various times in 1943, 1944, and 1945. Most, if not all, appeared to have been ex-USAAF machines, meaning they had been operated by USAAF in a combat capacity before being transferred to the FFAF.

September 1943: 41-18026

October 1943: 41-17859

Note: AF records show that both 41-17980 and 41-18013 were diverted to French on 10/2/43 and another entry stating that they were diverted to RAF on 10/5/43.

Author believes that they were not diverted to FFAF.

June 1944: 41-18271

July 1944: 41-18206, 41-31584, 42-43296, 42-95778, 42-95951, 42-95979, 42-95995, 42-96007

August 1944: 42-95956

September 1944: 42-43306, 42-95760, 42-95985, 42-96008, 42-96012, 42-96018

November 1944: 41-18061, 41-18203, 41-18286, 41-18307, 41-18328(not totally sure), 41-31594

December 1944: 41-17753, 41-17758, 41-17823, 41-17829, 41-17844, 41-17851, 41-17923, 41-17959, 41-17968, 41-17981, 41-18010, 41-18027, 41-18033, 41-18036, 41-18045, 41-18056, 41-18074, 41-18083, 41-18088, 41-18092, 41-18100,

Jan 1945: 41-17918, 41-18189, 41-18202, 41-18265, 42-96006

Feb 1945: 41-18297 (diverted to FFAF on 2/16/45 and record shows that it was considered "Inv't Lst" (Investment lost) on the same date. Author believes that it might have been diverted to FFAF as spares)

May 1945: 41-18023

August 1945: 41-18022

41-31593 (transfer date not known), 42-95775 (transfer date not known)

No B-26B was assigned to the FFAF with specific Free French project numbers. They were all diverted from USAAF inventory as above. This is understandable

because by 1943, all B-26Bs were already earmarked for the USAAF and the RAF and there was nothing left from the Martin factory to be assigned to the FFAF.

B-26Cs transferred to FFAF through lend-lease

96 B-26Cs were identified from AF records to have been supplied to the FFAF of which 42 were diverted from USAAF inventory and 54 were specifically assigned for the Free French AF.

The following 42 B-26Cs were diverted to the FFAF from the USAAF inventory at various times in 1944, 1945, and even 1946 through the lend-lease program but no specific program numbers were assigned. Most, if not all, appear to have been ex-USAAF machines, meaning they were operated by USAAF in a combat capacity before being transferred to the Free French.

April 1944: 42-107771

July 1944: 42-107547, 42-107551, 42-107552, 42-107570, 42-107636, 42-107757

September 1944: 42-107564, 42-107569, 42-107727, 42-107737, 42-107738, 42-107779, 42-107781, 42-107785, 42-107786, 42-107794, 42-107801, 42-107852

November 1944: 41-34907, 41-34977, 41-34984, 41-35007, 41-35024, 41-35027, 41-35050, 41-35131, 41-35135, 41-35140, 41-35186

March 1945: 42-107549

Between March and May of 1946: 41-34982, 42-107666, 42-107755, 42-107733 (condemned 4/46, to FFAF 5/8/46 possibly as spares), 42-107754 (condemned 5/10/46, to FFAF 5/8/46 possibly as spares).

Note: 42-107752 might have been planned for FFAF but went to ninth AF on 11/20/44)

41-34985, 35032, 35141, 35177 (These 4 B-26Cs appeared to have been loaned to FFAF but the exact dates of transfer were not known. When they were returned to USAAF possession in September 1944 as recorded, they were also condemned immediately)

42-107726 (date of transfer not known, but believe to have been in July or Sept of 44)

42-107728 (date of transfer not known, but believe to have been some time after April 1, 1944)

55 B-26Cs were assigned to the FFAF as part of the lend-lease agreement just like the other B-26Cs mentioned above but were assigned specific Free French project numbers. They were newly-built machines from the Martin factory. See Table 1 for the identities of these B-26Cs.

B-26Fs transferred to FFAF through lend-lease

Review of USAAF records shows that no B-26F was supplied to the FFAF.

B-26Gs transferred to FFAF through lend-lease

In all, 136 B-26Gs were supplied to the FFAF under lend-lease of which 23 were originally for USAAF but diverted to the Free French and 113 were specifically assigned to the FFAF.

The following 23 B-26Gs were supplied to the FFAF in September 1944. USAAF records show that they were originally planned for USAAF with project numbers assigned for USAAF but diverted to the Free French in the last minute. So no Free French project number was assigned to these B-26Gs. It appears that they were directly from the aircraft factory and not ex-USAAF machines except as noted.

43-34215 (ex-USAAF machine), 43-34253, 43-34265, 43-34266, 43-34268, 43-34269, 43-34271, 43-34272, 43-34273, 43-34275, 43-34276, 43-34277, 43-34278, 43-34279, 43-34280, 43-34281, 43-34282, 43-34283, 43-34285, 43-34292, 43-34378, 43-34379, 43-34387.

113 B-26Gs were assigned to the FFAF as part of the lend-lease agreement just like the other B-26Gs mentioned above but were assigned specific Free French project numbers. They were newly-built machines from the Martin factory. See Table 2 for the identities of these B-26Gs

Wai Yip (SAFCH #1421), USA.

References

- 1) Air International Magazine, February 1988
- 2) Martin B-26 Marauder (Warbird Tech Vol. 29) by Frederick A. Johnsen
- 3) Warbird Information Exchange website: <http://www.warbirdinformationexchange.org/phpBB3/viewtopic.php?f=3&t=38876&start=0>
- 4) Camouflage and Markings, Martin B-26 Marauder, USAAF & 1st TAF, 1941-45.
- 5) Internet on 320 Bomb Group http://320thbg.org/b-26_markings.html
- 6) Internet on the Free French Air Force http://www.paquelier.com/paqsenior/la_renaissance_de_IE.htm
- 7) Rearming the French (part of the United States Army in World War II series) by Marcel Vigneras
- 8) Rearming the French in World War II by Monro MacCloskey
- 9) Air Arsenal North America by Phil Butler with Dan Hagedorn.
- 10) The History of M.A.A.F (1 September 1944 – 9 May 1945), Chapter XIV "The French Air Force in M.A.A.F." by Headquarters Mediterranean Allied Air Forces (MAAF).

Author's Notes

This is the author's attempt to identify all Martin's B-26s supplied to the FFAF during WWII. In addition to the USAAF, the B-26s were also supplied, under lend-lease, to the Royal Air Force and some of which were, in turn, transferred to the South African Air Force. The identities of these B-26s are well documented. However, B-26s supplied to the FFAF are not so. This research is based on the USAAF aircraft records from the Air Force Historical Research Agency at Maxwell Air

Force Base. The records are coded and the entries for the transfer to the FFAF were mostly hand-written and not always consistent. For examples, aircraft transferred to the FFAF were sometimes coded, "NAF" (North African Force) or "FAF" (French Air Force) and sometimes just stated "div French". Judgment calls are sometimes necessary in determining the date of transfer and whether a particular B-26 was diverted to the Free French. The author was able to obtain

a copy of the very comprehensive but out-of-print book titled, "Les Maraudeurs Francais" by Patrick Ehrhardt but the author was unable to reconcile his findings with the list of B-26s operated by the Free French in the book. References 7 and 10 are official USAAF documents and contain a wealth of information pertaining to this subject. This article is by no means complete. Readers' comments and corrections are kindly solicited.

Table 1 (B-26Cs with specific Free French project numbers assigned)

The following 55 B-26Cs were assigned to the FFAF as part of the lend-lease agreement and were assigned specific Free French project numbers. They were newly-built machines from the Martin factory and not diverted from USAAF inventory.

USAAF serials	#	Project #	Remark
42-107646/107660	(15)	90554F	B-26C-45, supplied in Feb & March 1944
42-107704/107710	(7)*	90555F	B-26C-45, supplied in March 1944
42-107712/107718	(7)	90555F	B-26C-45, supplied in March 1944
42-107763/107767	(5)**	90601F	B-26C-45, supplied in March & April of 1944
42-107769/107777	(9)	90601F	B-26C-45, supplied in March & April of 1944
42-107822/107833	(12)	90620F	B-26C-45, supplied in April & May 1944
Subtotal	55		

*Note: 42-107711 was originally planned for FFAF with French project # 90555F assigned. It was operated instead by USAAF 320 BG 441 BS and crashed on 8/15/44.

**Note: 42-107768 was assigned to Project 90601F but was not transferred to the FFAF. Instead, it was operated by the 9th AF. Reason for this last minute change is not known.

Table 2 (B-26Gs with specific Free French project numbers assigned)

The following 113 B-26Gs were assigned to the FFAF as part of the lend-lease agreement and were assigned specific Free French project numbers. They were newly-built machines from the Martin factory and not diverted from USAAF inventory.

USAAF serials	#	Project #	Remark
43-34580/34582	(3)	90922F	B-26G-10, supplied in October & November 1944
43-34584/34602	(19)	90922F	B-26G-10, supplied in October & November 1944
43-34575	(1)*	90922F	B-26G-10, supplied in October & November 1944
44-67845/67863	(19)	90966F	B-26G-15, supplied in November 1944
44-67866	(1)**	90966F	B-26G-15, supplied in November 1944
44-67930/67936	(7)***	90967F	B-26G-15, supplied in late November & mid December 1944
44-67938/67944	(7)	90967F	B-26G-15, supplied in late November & mid December 1944
44-68165/68219	(55)	93101F	B-26G-25, supplied in April & May 1945
44-68254	(1)	93101F	B-26G-25, supplied in April & May 1945
Subtotal	113		

*Note: 43-34583 was originally planned. It was damaged beyond repair before delivery and was not transferred to the FFAF. Instead 43-34575 was taken out of USAAF inventory and transferred to the Free French instead.

**Note: 44-67864 was originally planned but was kept by USAAF for the 9th AF and was not transferred to the FFAF. 44-67866 was transferred instead. Reason unknown.

***Note: 44-67937 was originally planned but was damaged at the factory and became instructional airframe. It was not transferred to the FFAF and it appears that there was no replacement.



I.Aé-27 Pulqui I & I.A.-33 Pulqui II, by Fernando C. Benedetto. Serie Fuerza Aérea #22. Landscape. 64 A-4 pages. Spanish text. (2012) Editor: Jorge Nuñez Padín; email jfnpadin@yahoo.com.

Jorge informs me that the author had unprecedented access to the I.Aé archives while researching this book. This is evident from the amount of detailed information and numerous photos that are presented.

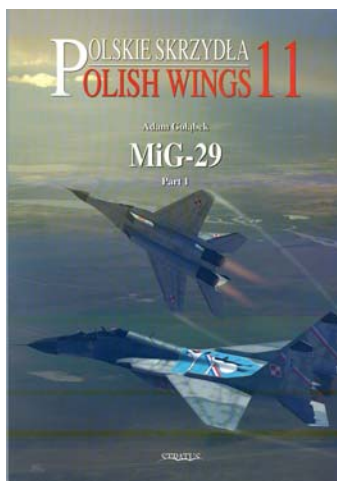
After the end of WW2, several European aeronautical engineers immigrated to Argentina. Among them were Emile Dewoitine of France and Kurt Tank of Germany who independently developed fighter aircraft for the Argentine Air Force. Emile Dewoitine developed the Pulqui I (Arrow), a straight-wing jet that failed to meet expectation. Kurt Tank was more successful with his swept-wing Pulqui II (no relation to the Pulqui I). These were the first jet fighters designed in Latin American and their stories are told in this latest book published by SAFO-member Jose Nuñez.

This book is in the usual excellent format we have come to expect from Jorge. The chapters are: 1. I.Aé-27 Pulqui I (10 pages, 18 photos). 2. I.Aé-33 Pulqui II (27 pages, 46 photos). 3. Técnica (8 pages, 9 photos, 8 technical sketches). 4. Historias Individuales (3 pages, 8 photos). 5. Conclusiones (1 page, 1 photo). 6. Colores e Insignias (1 page, 2 photos). Appendix; Informe de Vuelos de Prueba Prototipo Pulqui II (a 1-page table).

An outstanding feature of all of Jorge's publications is the excellent reproduction of the photos (both b&w and color) and the beautiful color drawings. There are 19 color photos. However, the *pièce de résistance* is 10 pages of full-page color profile- and plan-view drawings: I.Aé-27 (2 profile & one

plan view); I.Aé-33 (5 profile- and one 3-view).

Serie Fuerza Aérea #22, *I.Aé-27 Pulqui I & I.A.-33 Pulqui II*, is highly recommended for all enthusiasts of Latin American aircraft, for lovers of early jet aircraft, and for anyone who just appreciates a well-produced colorful book about aircraft. Copies are available from the SAFCH Sales Service safo@redshift.com for \$20 plus p&p.



MiG-29: Part 1, Polish Wings #11. by Adam Gołabek. A-4, 96 pages, softcover. (2010) ISBN 987-83-61421-06-1. Published by Wydawnictwo Stratus. Available from MMP Books. \$25.00. Text entirely in English.

MiG-29/MiG-29UB: Part 2, Polish Wings #12, by Adam Gołabek. A-4, 96 pages. softcover. (2011) Published by Wydawnictwo Stratus. Available from MMP Books. \$25.00. Text entirely in English.

These two books are unique (at least in my experience) in that they provide photos and color profiles for every individual aircraft of a given type used by a given air force – in this case the 18 MiG-29, 18 MiG-29G, 4 MiG-29UB, and 4 MiG-29GT in the Polish Air Force.

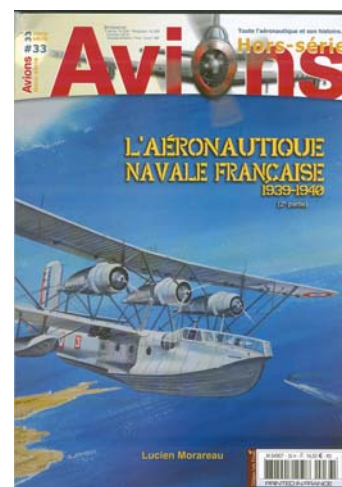
Each individual a/c is covered by color photos, color profiles, and color multi-view drawings. The number of pages for each a/c varies; e.g. MiG-29 '38' is given 8 pages with 25 photos and 3 color profiles, while MiG-29 '66' is allotted 3 pages with 8 photos and one 4-view color drawing.

The total number of color photos and drawings is 288 in Part 1 and 256 in Part 2. The photos show unequivocally that the Polish "checkerboard" was carried only on the lower surfaces of the wing and the out-board surfaces of the twin tail.

A 13-page Introduction summarizes the acquisition and service use of the MiG-29s in Poland and includes color photos of the various emblems carried as well as a detailed description of the various camouflage colors used. Tables for each subtype include PAF Code number, previous Code number, serial number, unit allocation, camouflage identification, service history, and fate.

These books are printed on high-grade glossy paper that show the color illustrations to their best effect, and are well bound to take rough usage, and – best of all – are entirely in English. These books are a "must" for all students of the modern Polish Air Forces, for all lovers of the MiG-29, and for any modeler searching for color schemes to apply to a MiG-29 kit.

The review copies of these books can be obtained from the SAFCH Sales Service safo@redshift.com for the prices indicated (plus p&p) or directly from Mushroom Model Publications, Roger Wallsgrove, 3 Gloucester Close. Petersfield, Hampshire GU323AX, UK; rogerw@mmpbooks.biz; www.mmpbooks.biz.



L'Aéronautique Navale 1939-1940, by Lucien Morareau. Hors-Série Avions #33. (2012) Editions Lela Presse, 29 rue Paul Bert, 62 230 Outreau, France.

www.avions-bateaux.com. E-mail: contact@avions-bateaux.com. € 14.50.

This is the second of two volumes covering French naval aviation units from the declaration of war until the Armistice in 1940.

This second volume begins with 4 pages with 8 color profiles of aircraft of units covered in Vol. 1 (CAMS 55, Laté 302, Laté 523. CAMS 141, GL 812, CAMS 55, Loire 130, & Breguet Calcutta).

Volume 2 begins in earnest with 3 pages (6 photos) of aircraft in the *Flottille*. This is followed by a large section on *Hydraviation Embarquée* [28 pages, 30 photos, color profiles (GL 832, & Loire 130), and 2 Order of Battle (on declaration of war & the Armistices)].

This section covers the aircraft serving aboard the *Navires de Ligne* (Dunkerque, Lorraine, Richelieu, & Strasbourg), the *Croiseurs de 1^{re} Classe*, and smaller ships. *Avisos Coloniaux* [6 pages, 5 photos, & one color profile (CAMS 37)] is on naval aircraft in Asia and the South Pacific.

The remaining 35 pages cover diverse naval units [58 photos, 7 color profiles (CAMA 37, NA 57, Caudron Goeland, MS 230, Potez 567, Dewoitine D.373, & Potez 542)]. The book ends with a Table listing the number of each aircraft type in service at the time of the Armistice and two maps showing the location of the naval bases in France and North Africa. (I bet you always wanted to

know the locations of Heyères and Karouba.)

In all, this book contains 96 pages, 97 photos, 20 color profiles. The reproduction of the photos is excellent and the color profiles are – well – colorful. Many of the aircraft illustrated are little known outside of France.

The text is entirely in French, but the photos, color profiles, tables, and maps make it useful to any aviation enthusiast with only a rudimentary knowledge of the French language and a love for those ugly and elegant, aircraft produced in France in the years immediately preceding WW2.

Order directly from Lela Presse, and while you're at it, also order the first volume.

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Aviation Classics, #18: Messerschmitt Bf 109 (132 A-4 pages) published by Mortons Media Group, PO Box 99, Horncastle, Linc. LN9 6JR, UK. Email: help@clasicmagazines.co.uk. Website: www.classicmagazines.co.uk.

“Not another 109 book!” you say. However, this one is different. While the development and service use of all 109 variants are described succinctly in text, photos, and color profiles, there are other chapters that should please the readers of SAFO.

Let's begin by listing the chapter titles: (1) Willy Messerschmitt. (2) Genesis of a legend – 109 design and development. (3) Into service and into battle – the 109A to D. (4) The 109 in combat. (5) Firepower and performance – the 109F. (6) Production – the key to Success. (7) Lithe and light – the 109F. (8) Gustav – too much of a good thing.

(9) Kurfurdt – production priorities. (10) Erich Hartmann. (11) ‘Toni’ – the carrier 109. (12) Dead ends and desperate designs. (13) Inside the 109. (14) Czech Mules and Spanish Pigeons. (15) The 109 abroad. (16) Survivors.

Of general interest are:

- Messerschmitt designs from M21 to M36 (Chapter 1: 14 pages & 37 photos).
- “Bf 109T; its ship, its unit, and its combat history” [Chapter 11: 17 pages, 30 photos, & 2 color profiles (Dutch D.21)], by SAFO's own Doug Dildy, is well-researched and excellently written.

More to the SAFO-point are:

- Postwar Bf 109 variants and their surprising roles in war and peace. [Chapter 14: 9 pages, 28 photos (Spain, Czechoslovakia, & Israel), and one color profile (Israel)].
- The Bf 109 in service with other countries: Bulgaria, Finland, Hungary, Italy, Japan, Romania, Slovak Republic, Switzerland, Yugoslavia, & Allied Use [Chapter 15: 5 pages, 13 photos, and 5 color profiles (Bulgaria, Croatia, Switzerland, Yugoslavia, & RAF)].

Aviation Classics' issue on the Bf 109 may not be of interest to readers with an extensive knowledge of the Bf 109, especially its use outside of the Luftwaffe, but the average enthusiast of the small air forces will find it informative and entertaining.

This issue of Aviation Classics can be ordered directly from the publisher at

£5 plus p&p. Better yet, get a 4-issue subscription for £20 in UK (elsewhere ?).



ASAS – Revista de Cultura e história da Aviação. [Ed: I have not seen this magazine, but if the article on the Lebanon's Huey bombers published elsewhere in this issue of SAFO is any indication of the quality of their articles, then it should be of interest to anyone with even a rudimentary knowledge of the Portuguese language. The following information was provided by the editor of ASAS.] “The ASAS is a magazine that rediscovers the pleasure of reading combined with visual entertainment. This combination results in consistent content united to high quality layout and images. Our goal is to produce a magazine that presents the history, present, and future of aviation. It is not a technical magazine, with articles resembling boring reports or analyzes. Bi-monthly. Language: Portuguese. Website: www.creditorial.bom.br. Email: lucchesi@revistaasas.com.br.

"I'm sending two photos that might be of interest to our members. The first is a MiG-21 at the National History Museum at Ulaan baatar, photographed 2012.08.17. The "100" is not a unit or s/n. It was added in 2011 to mark the 100th anniversary of the 1911 Revolution."



"The second photo is of a MiG-15UTI photographed on 2012.08.16 at Nalaikha. It was donated in July 2012 by the 337 Brigade of the Mongolian Air Force. The *soyombo* on the wing is new to me. I think it has a Sanskrit origin. It is the national symbol of Mongolia, with a yin-and yang, and bars, until 1990 when it was topped by a red star. I would like to get the details of its history as an aircraft marking. I'm not sure if it was ever used before and I've not seen it on any modern Mongolian military aircraft."



Denys Voaden (SAFCH #1483), USA.

"Please find attached two photos of Estonian Air Force aircraft: a Robinson R44 helicopter and an Antonov An-2 biplane. The photos are available for publication both on SAFCH homepage and on paper in SAFO. I specifically requested photos with publication permission from the Estonian AF, who very kindly obliged.

"The Estonian AF at present operates four of the helos (either with skids as shown on the photo or with float

undercarriage) and two of the An-2 biplanes (used both for paratroop training and water-bombing of forest fires)."



Kai Willadsen, (SAFCH #863), Denmark.

"I've been looking at your review of the Antarqui Decals sheet for the Estonian Hawker Fury. As far as I know, Estonia didn't have any Hawker Furies! However, *Hawker Fury & Nimrod* by Alex Crawford in the MMP Orange series cites a rumour that some of the surviving Danish Hawker Nimrod IIs may have found their way to the Eastern Front with the Luftwaffe. In 1943, nine Danish Nimrods were in a hangar fire, but photos show the remains of only two. Coincidentally, one of those allegedly burnt was '178' as is the Estonian aircraft on the decal sheet.

"Another problem are the wheel pants/spats as only the High Speed Furies had these, and as far as I know they never left the UK. If this is indeed a correct colour scheme, it would be nice to see a photo to confirm it.

"If it is a Nimrod II, the modeller will need at least two Impact/Lifelike/Pyro kits [same moulds] or two Airfix kits as the wings on a Nimrod II were of longer span, swept back slightly, and of increased chord - they were Naval aircraft after all! Converting a Fury to a Nimrod isn't straightforward!"

Malcolm Barratt (SAFCH #1716), UK.



Fig. 1



Fig. 2

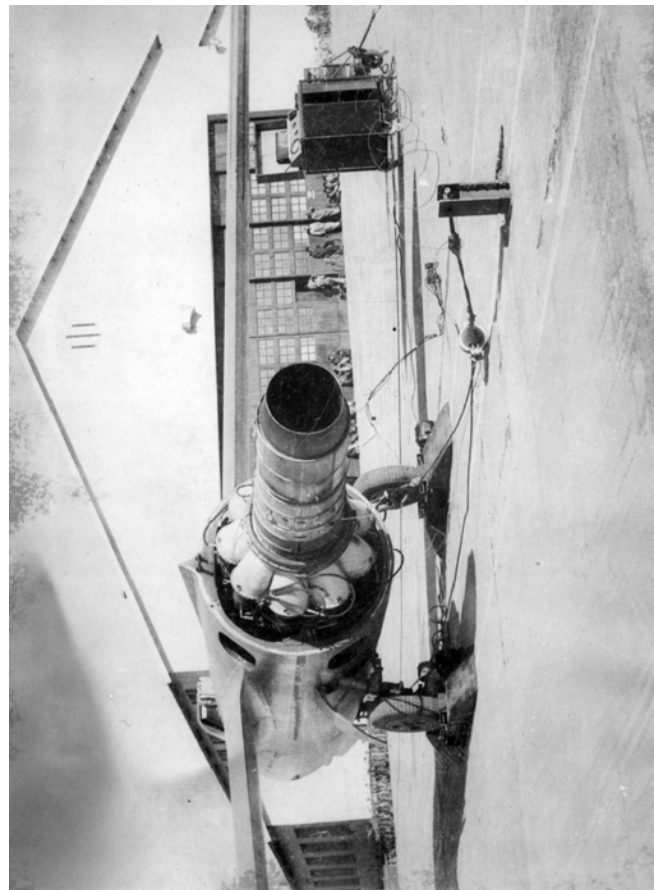


Fig. 3

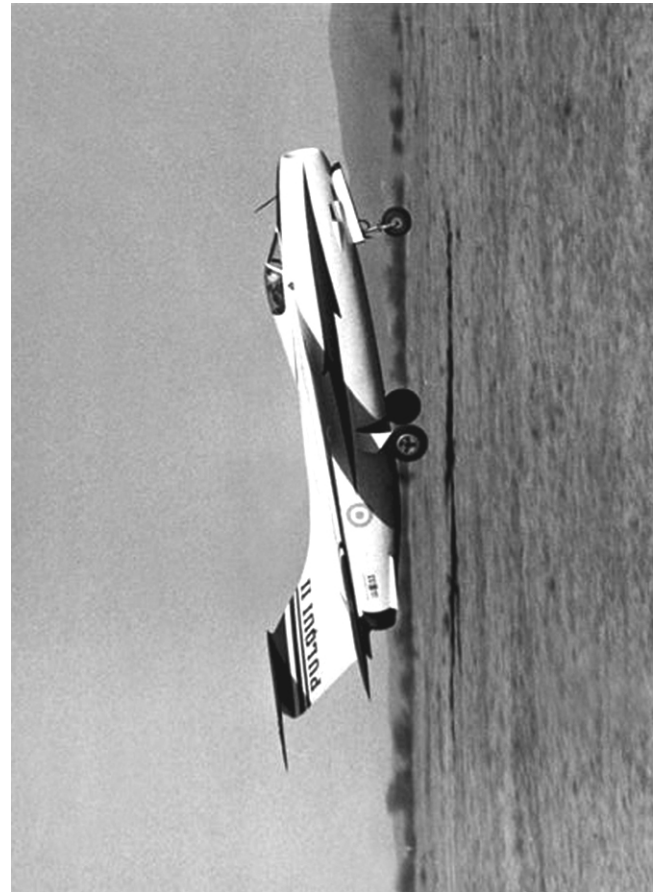


Fig. 4